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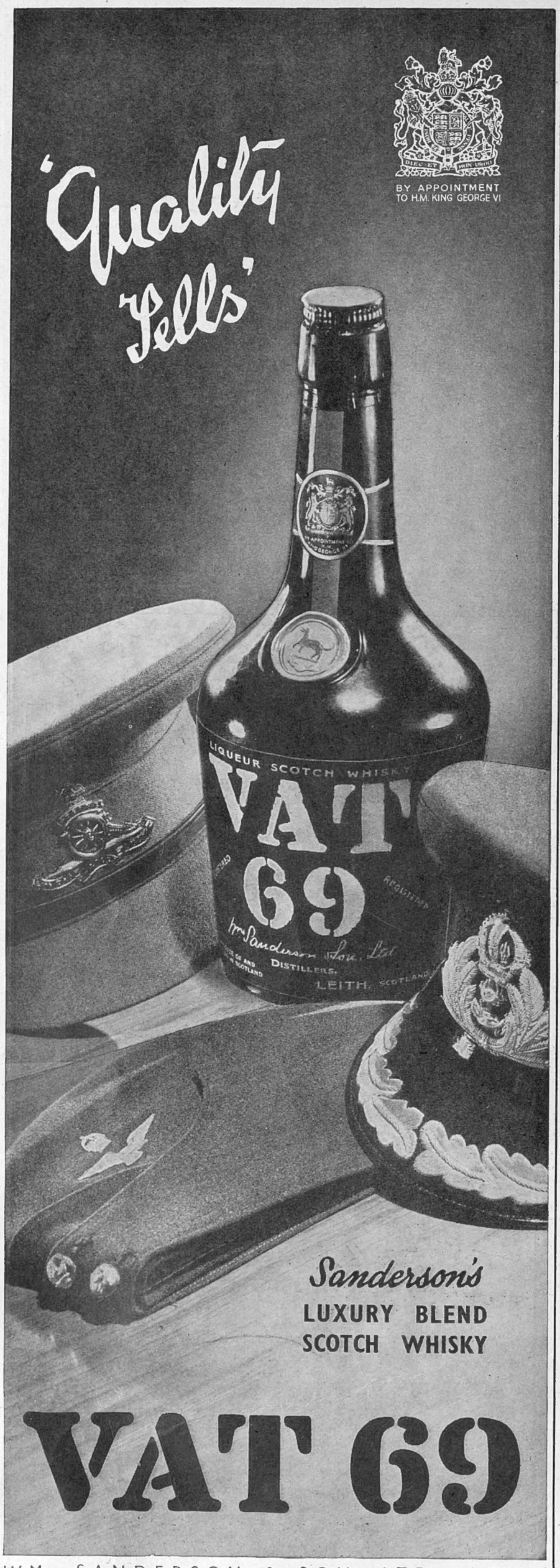

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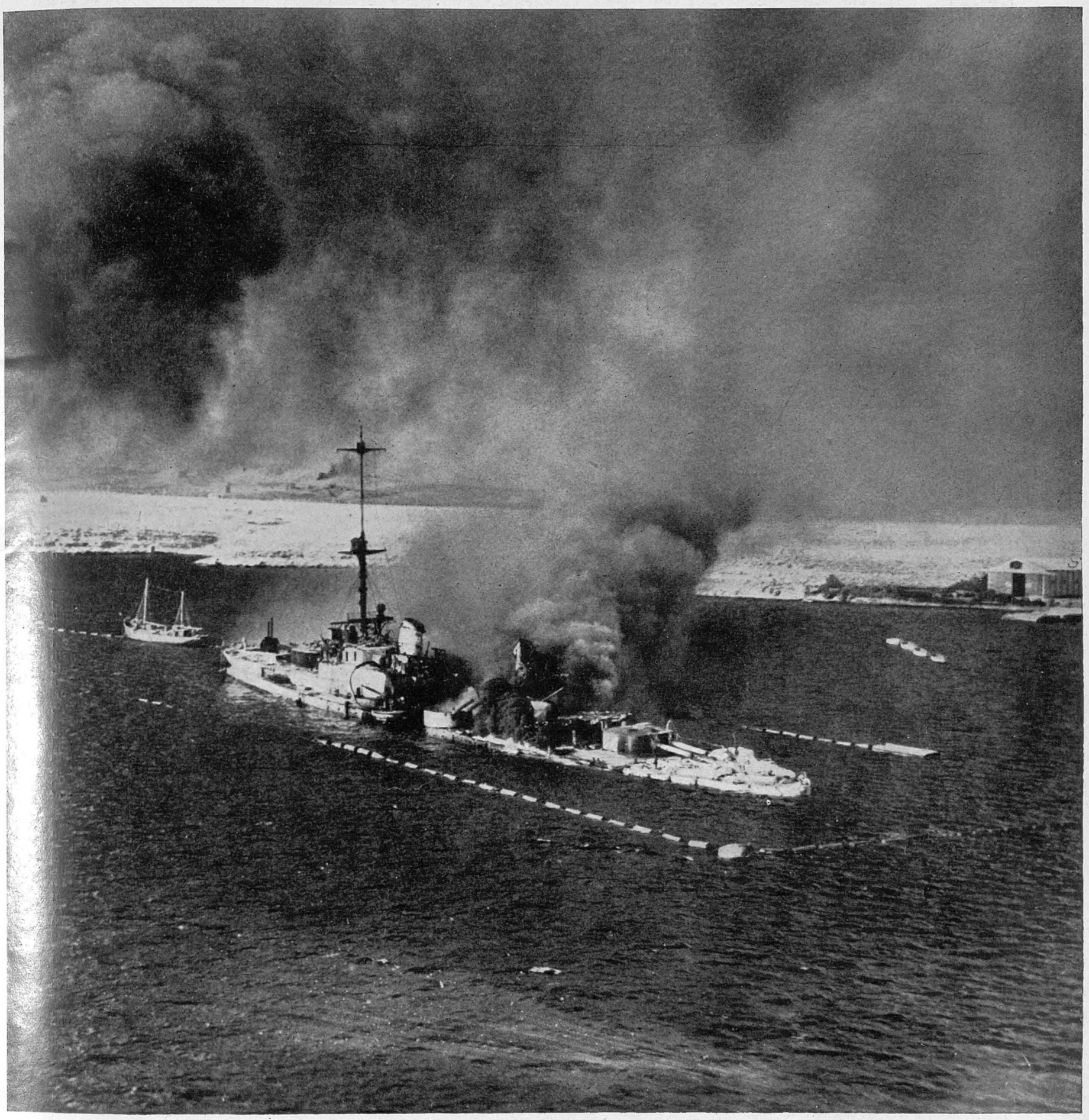
Volume CLXIV No. 2143 The SPHERE, London, February 15, 1941

THE SPHERE

With which is incorporated "THE GRAPHIC"

The Empire's Illustrated Weekly

London, February 15, 1941



THE CRACKING OF THE ITALIAN "EMPIRE": THE SCENE IN TOBRUK HARBOUR, CAPTURED BY GENERAL WAVELL'S ARMY OF THE NILE ON JANUARY 21—THE END OF THE ITALIAN CRUISER "SAN GIORGIO," WHICH IS SEEN BURNING FURIOUSLY AMIDSHIPS

On December 23, broadcasting direct to the whole Italian nation, Mr. Winston Churchill declared that "our armies are tearing, and will tear, your African Empire to shreds and tatters." Since that date the whole of Cyrenaica has fallen into the hands of General Wavell's gallant Army of the Nile; since that date we have gained Bardia, Tobruk, Derna, Cyrene, Benghazi . . . and even now our forces are moving on into Tripolitania. At the same time, other British forces are pushing into the heart of Eritrea, Abyssinia, Somaliland. . . . Truly, the Italian gim-crack "Empire" is cracking! On this, and other pages of the present issue, we present the latest official pictures to be received in London from the areas of operations. Tobruk, it will be remembered, was captured on January 21: here the Italian cruiser *San Giorgio* had been badly damaged by the R.A.F. in previous attacks on the harbour. This was a thirty-year-old warship of 9,232 tons which had an armament of four 10-in. guns and eight 7.5 guns. After her disablement she was run aground and surrounded with netting as a protection against attack from the sea. She was then used as a fortress in the harbour, mounting heavy anti-aircraft guns in addition to her original armament, and supplying the Italian defenders with their biggest guns. Shortly before Tobruk fell, the cruiser was again very severely damaged and set on fire. This picture, taken within a few hours of the entry of our Army into Tobruk, shows the end of the cruiser, blazing furiously amidships as she lay on the harbour bottom

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A WAR NEWSLETTER—No. 76

32-34, ST. BRIDE STREET, E.C.4.

MR. CHURCHILL'S GREAT SPEECH—FEBRUARY 9.

— This latest speech of the Premier was perhaps the finest, as it was certainly the most confident and cheerful, of any which he has delivered since his Premiership began in the hour of our fate. Much has been done, yet much remains to do—that was the keynote. What was new and infinitely welcome to us was the changed proportions of space allotted to *acta* and to *agenda*. His earlier speeches were 90 per cent. faith in the future; in his latest speech he was able to devote 50 per cent. of his time to reviewing the confidence-inspiring achievements of the past. The Mills of God have, like our war-output organisation, got into their swing and have ground out in full measure and exceeding small the flour of one Dictator's bitter bread. The great and terrible judgment is set and the books are open, and already one of the two great criminals is in the dock. The penitent thief is whimpering, and the hounds of Heaven are on the trail of his accomplice and master. One more struggle—more bitter, more testing, not less critical—(in the issue of which our recent record gives us calm faith) . . . and then, by God's help and Britain's example and endurance, the world may once more be set free and the guilty sent to their account.

THE PRIME MINISTER VISITS HIS OLD BATTALION: During a recent tour of the Eastern Counties, Mr. Winston Churchill paid a visit of inspection to the Battalion of the Royal Scots Fusiliers which he commanded for some time during the last war. After an informal inspection he addressed the men, and was then able to announce the great news of the fall of Benghazi. In this picture it will be noted that the Premier is carrying his Service gas mask. *A word to the wise. . . .*

THE WRITING ON THE WALL—SPRING, 1941.—

I feel no doubt that there are thorns in Hitler's pillow. As the Furies troubled the sleep of Orestes, so during this last lap of winter they are troubling the Führer's. In my ignorance, I never believed that Germans and Italians together could defeat the British Empire. But it *was* an ignorant belief, because eight months ago it was nip and tuck if we could win through. We did much more than come through last summer, and I feel no doubt at all that to-day we are proof against defeat, and indeed assured of a victory, which, at the worst, will give a more permanent chance of European and world security against war than did the victory of 1918—and perhaps 1942 may find us at peace. The dangers and trials which await us are many and grave enough. They lie ahead, formidable, menacing, imponderable in the military and economic spheres; but to view them with a right judgment we must set off what the enemy has lost in the past few months against what he has gained and retained in power to destroy us. The set-off is tremendous. The winter has proved our best friend. In the battle of Britain, the last six weeks of comparative immunity have wrought a mighty change on our home front. Output of war material has piled up; the training of our Army at home has advanced by leaps and bounds; air squadrons have been reorganised and multiplied, and new types of more efficient machines of all kinds have come into full use. The Navy is stronger than ever before, and new devices to counter the spring offensive by air and by submarines against our shipping have been perfected. The lull has helped the Germans also, but the opportunity it gave was infinitely more important for us. [*E.G.* — When I observe the improvement in training and equipment and defence preparation of some of the 1½ millions of Home Guards, during the past 6 months, I feel a confidence about our ability to repel invasion which amounts to a doubt if even Hitler's callousness will attempt it. Employed in co-operation with our large regular army, trained to the last ounce, the Home Guard's local knowledge is a peerless asset.] Then the Mediterranean. The Army of the Nile, the Fleet and Air Arms in those waters, have brought about a change in the war position which, taken with the glorious saga of the Greeks, has transformed the chess-board.

ONE AND INDIVISIBLE.

The Totalitarian ideology is one and indivisible. The Nazi system was always more efficient and terrible than the Fascist, but the two are not to be separated. It was the will of their founders which identified them under one label, and to-day Fascism is revealed and laid bare as a cheap façade hiding emptiness and rottenness behind a flamboyant and frightful screen. The thing for which Englishmen like Mosley sacrificed their careers and made themselves ridiculous is proved a thing of cardboard which disintegrates with bad weather and leaves behind nothing but bitter memories of cruelty, injustice, tyranny, lies, empty boasts, and insane suppression. When the Fascist façade collapsed, the whole ideology was shaken to its false foundations, and Hitler was jolted on his uneasy throne. The waverers took heart. The nations enslaved already gained further spirit to resist, and those prepared to submit to slavery took courage to think again. The bogey is still capable of inspiring fear among those who are nearest to it and least capable of self defence, but all men know now that its face is cut out of a rotten turnip, and that it is not supernatural or superhuman. For Hitler, whose façade still stands and hides much of his new disorder, there remain many possible expedients and experiments, but everyone is open to a fearful risk and patent objection. Whatever military effort he elect to try, he must lengthen his already far-flung front, and precarious communications, increase the number of his secret enemies and strain still further his tightly stretched resources. Whatever he elects to try, he knows that it can but stave off the day when *his* façade also will crumble down and reveal the emptiness and rottenness of his new order. He has surely seen and interpreted the writing on the wall.

AN EXCELLENT SUBSTITUTE.

—If the Government can succeed in due course by propaganda to impinge our peace aims on Europe with half the success with which they have impinged the virtues of the carrot, they will have cause for satisfaction. In three weeks they succeeded in getting the carrot accepted as an ideal substitute for almost everything we lack in the way of dietary frills—for chocolates, sweets, jams, marmalade, fruits, and so forth. Already carrot-marmalade factories are at work. Already—with almost cynical aptness—those who frequent cheap cinema shows are offered (in lieu of chocolates) the ass's favourite food. It is a triumph for Lord Woolton, Mr. Cooper, and for whoever-it-was. It proved the fineness of our national metal. It is almost pure gold—practically 24 carrots. *N.B.*—This is a pun and, if I may say so, I have read and written worse puns.

BOOKS AND BOMBS.—

It is probably no exaggeration to say that five millions of books were destroyed in the Nazi fire bombardment on that single Sunday a few weeks back. Individual publishers lost as many as 100,000 volumes in the hands of the binders. It may be a matter of opinion how many of those books were really worth publishing. There are no two opinions that the difficulties which to-day face publishers, in the performance of a great trust and a vital cultural safeguard, are as heavy as those which face the Press. The wonder is that the trade is not worse hit. The level of merit in new publications is still high, the number of new publications last year was extraordinarily high—about 11,000, without counting new editions and reprints—and among them was a high percentage of books of genuine merit and permanent value. These facts speak to the determination of the publishing profession and to the admirable morale of the reading public. We have not allowed our culture to be choked among the weeds of war; we have made up our minds to plan for peace intellectually. All honour to those who demand, and to those who supply, fit food for the minds of a noble race—and may they all have better luck and fewer handicaps henceforth.

THE SOUL OF FRANCE.

The soul of France was never destroyed, the flame never even wholly died down. General de Gaulle nursed it in his hands, and it burned steadily. The efforts of traitors and defeatists to extinguish it for ever have failed. That we know. What we have not known is the mind of Pétain and of Weygand, who hold the keys to still-living France. We may not suppose that these older Army leaders have any personal sympathy with de Gaulle. That could hardly be. But when Metaxas and Wavell smashed Italy, the flame of France's soul burst up in many parts of the ash surface, and then, as Pétain showed dignity and strength in his battle with Hitler and French traitors, as Weygand held and strengthened his Empire key-post, we began to hope and believe that the Marshals of France had not forgotten the great Foch tradition and intended to save from slavery and total extinction the soul of their country. So long as Hitler meant to abide by his pledged word, so long as there remained a bare chance that the Armistice terms would be honoured, and the dignity of a conquered France reasonably preserved, Pétain undoubtedly hoped and worked to save France from further sacrifice and to co-operate as far as might be with his conquerors in re-establishing a war-shattered, disrupted nation. But it seems that of one thing he is now convinced—that broken, disillusioned France will not submit, at the price of a shameful immunity from fresh suffering, to use her fleet against the ally she was forced to abandon or to yield her great, untouched Empire up as a base and granary for a common enemy and a detested race of perjured barbarians.

MEN OF CHARACTER.—

Lord Lloyd's untimely death evoked from men of every sort the verdict that men of strong character (such as he possessed) could ill be spared at this time. His particular strength of character was revealed, above all, in four main features: intense patriotism which comprised immeasurable pride and faith in the Empire, untiring energy and drive, a moral courage which was strongest in danger and opposition, and a breadth and length of vision which could see things whole, see things clear, and see things ahead. These qualities belong to no one class in the state. Some of them, however, have been suspect in the past to smaller men and critics in party warfare. Patriotism has been sometimes confused with Imperialism in a "jingo" sense, moral courage has been labelled crankiness or indiscipline, pride in the dignity of Britain sometimes has earned the name of extravagance. But big men of every type possess and appreciate those qualities, which soar above mere party strategies and jealousies. Character cannot be hid. It is printed on a man's forehead in letters of fire for all to read, whether that man live in a village or a capital city, whether he breaks stones or governs provinces, whether he makes boots or laws. The man of character, wherever educated, however bred, leads his fellows in his platoon, his village club, or in the council chambers of a Government. He makes enemies, but he is never despised; he is criticised, intrigued against, vilified, but his influence is never extinguished, and time brings justification. The very enmity which his actions arouse achieves a useful purpose in separating the sound men from the rotten, the strong from the weak, the big from the petty. It performs the work of Joshua and selects the dependable men for work in times of danger. Nothing is truer than that in times like these men of character in every sphere of our national effort come to the fore at once and can ill be spared. They are truly the mortar which holds together the walls of our defence.

THE OLD STAGER

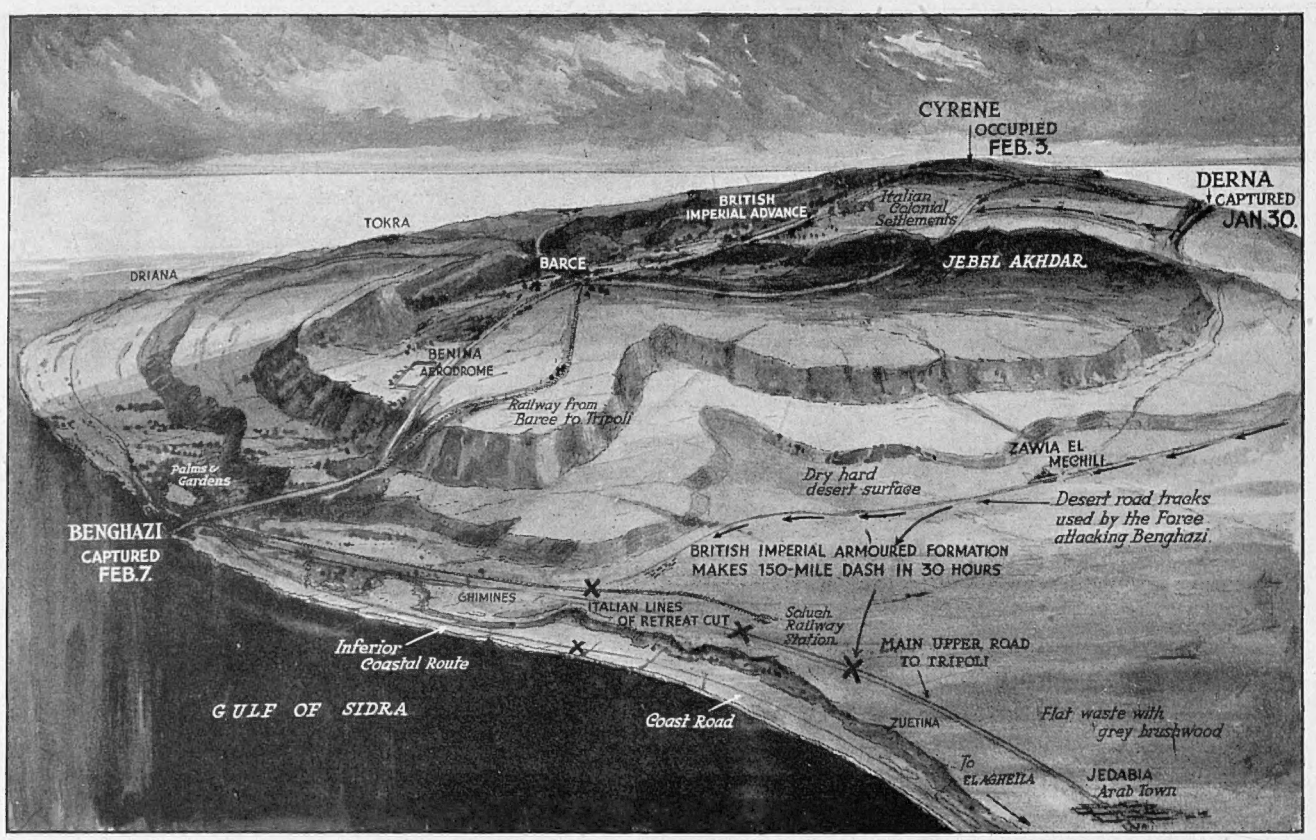
THE SCENE IN THE HARBOUR OF TOBRUK AFTER THE BRITISH FORCES HAD TAKEN POSSESSION: ITALIAN NAVAL PRISONERS LEAVING THE WATERFRONT FOR TRANSFERENCE TO PRISONERS-OF-WAR CAMPS

The CRACKING of the ITALIAN "EMPIRE"

Official Pictures of the Fall of Tobruk, January 21, 1941 (and Other Phases of the War on the African Continent)

Thirty-six hours after the assault on Tobruk was opened, the town and its harbour were in British hands. And within a few hours afterwards, units of the Army of the Nile were moving westwards in relentless pursuit of the beaten Italians towards Derna and Benghazi. With the fall of Tobruk, it was estimated that two-thirds of Marshal Graziani's forces had been lost, with a total of eleven Italian divisions put out of action—eight Blackshirt or Metropolitan divisions and three Libyan divisions, approximately 110,000 fighting men; to say nothing of the thousands of non-effective troops, who form a large proportion of the Italian forces, who were also captured. For the first time in the North African campaign, a great number of naval personnel were also taken prisoner; these were the crews of the various warships bottled up in the harbour, including the crippled cruiser, *San Giorgio*. When the British forces entered Tobruk, a large liner at anchor in the harbour was ablaze from stem to stern; smaller craft tied up alongside were also in flames, whilst the Italian cruiser, which had been used as a "fortress" by the defenders, and an oil tanker were burning furiously: other vessels were lying on the bottom of the harbour. A veritable holocaust of Italian naval hopes!

WITH THE TOWN OF TOBRUK (IN THE DISTANCE) IN FLAMES: THE SCENE AS ITALIAN NAVAL PRISONERS WERE BEING MARCHED OFF TO THE HIGHER GROUND OF THE INTERIOR. LARGE NUMBERS OF THESE MEN—FROM THE CRUISER "SAN GIORGIO" AND OTHER VESSELS IN THE HARBOUR—WERE MADE CAPTIVES



THE SURPRISE RUSH OF THE BRITISH IMPERIAL "ARMOURED FORMATION" WHICH CAPTURED THE RETREATING BENGHAZI ARMY

The conquest of the whole Italian province of Cyrenaica which includes Marmarica and the Egyptian Frontier district, was brought to its conclusion by a brilliant dash across the lower desert country south of the mass of the Jebel Akhdar which forms, as it were, the backbone of the Cyrenaica (or Barca) plateau. The only intimation that this might be taking place was to be gleaned from the fact that a column had been engaged with what was evidently intended to be an Italian rearguard action in the neighbourhood of the Zawia el Mechili, on the lower desert stretches which melt into the flat Sahara to the south. Derna was entered on January 30. British Imperial columns then pressed on through difficult country. But all resistance in the wooded gullies was overcome and Cyrene was occupied by February 3. The advance was continued through park-like country. In very different country—over "a dry, hard desert surface"

(*Continued on bottom right*)

The CRACKING of the ITALIAN "EMPIRE"

—*cont.*

ATTACKS IN ALL REGIONS BY BRITISH FORCES

In the Western Desert :

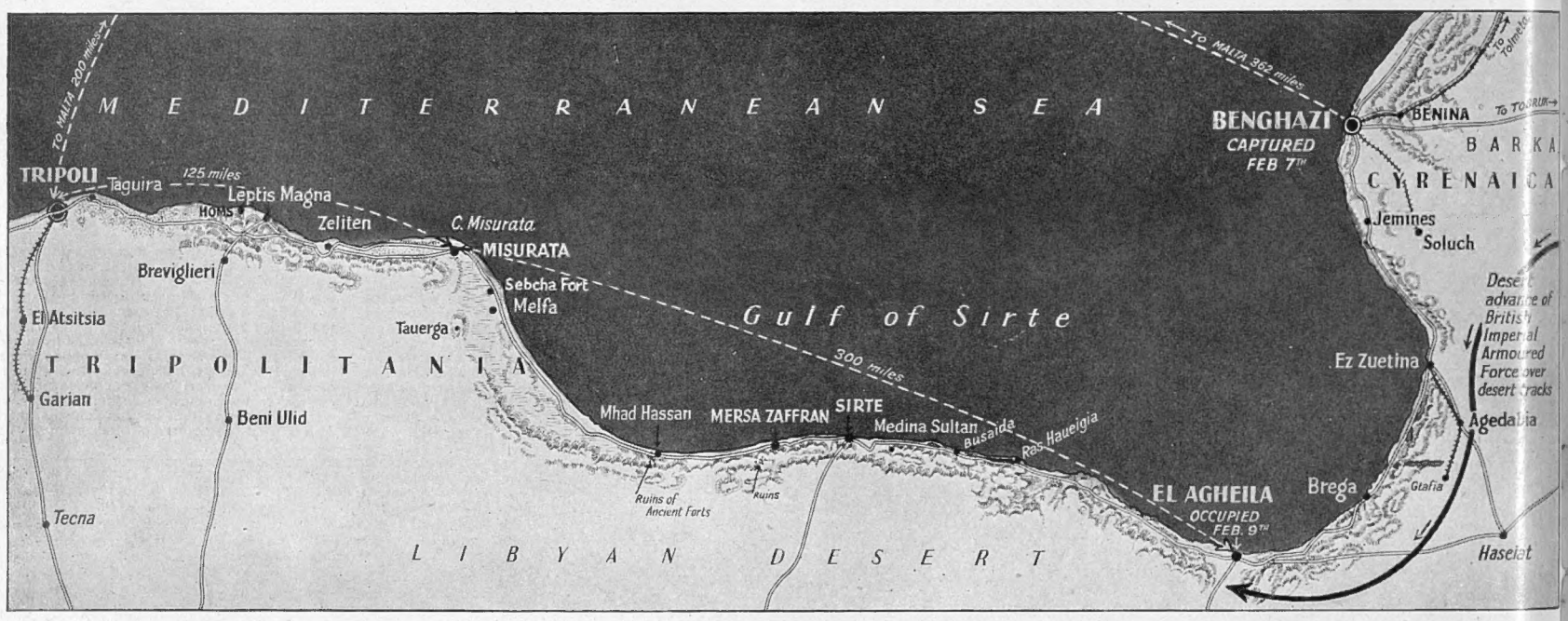
1940

December 9—British offensive against Italian invading army commenced.
„ 11—Sidi Barrani captured.
„ 16—Sollum re-taken.

1941

January 4—Bardia captured (60 miles from Sidi Barrani); 6 generals and 25,000 prisoners taken.
„ 14—Jarabub besieged.
„ 17—El Adem—largest aerodrome in Libya—occupied (South of Tobruk).
„ 21—Tobruk captured after 36 hours' fighting—provided good natural harbour. Graziani had now lost two-thirds of Libyan fighting forces.
„ 30—Derna, 110 miles away, taken; garrison of 10,000 evacuated.

February 4—Cyrene fell.
„ 7—Fall of Benghazi, most important Italian naval base in North Africa, and capture of army on road.



WHERE WILL WAVELL STRIKE NEXT? WILL HE CONTINUE ON TO TRIPOLI? With Cyrenaica conquered and Lieut.-General Sir Henry Maitland Wilson appointed Military Governor and G.O.C.-in-C. of the Libyan province, one phase of the campaign against the Italians has been brought to a triumphant conclusion. And already the Army of the Nile has occupied El Agheila, 175 miles from Benghazi at the southernmost point of the Gulf of Sirte : from this point the coast road to Tripoli, richest prize of all, runs for some hundreds of miles to the west. Will Wavell push on to Tripoli, or has he other strategic moves in view?

In Eritrea :

1941

January 18—Kassala (in Sudan) outpost, held by Italians since July, recaptured.
„ 20—British troops enter Eritrea. Tesseni and Subderat taken.
„ 24—Keru and Aricota evacuated by Italians.
„ 26—Biscia taken. (British troops now 100 miles into Eritrea.)

February 2—Agordat captured. Many prisoners, tanks and mechanical transport taken.
„ 3—Barentu occupied.
„ 5—British troops advancing on Keren.

In Abyssinia :

1940

November 6—Gallabat, on Sudan frontier, recaptured.

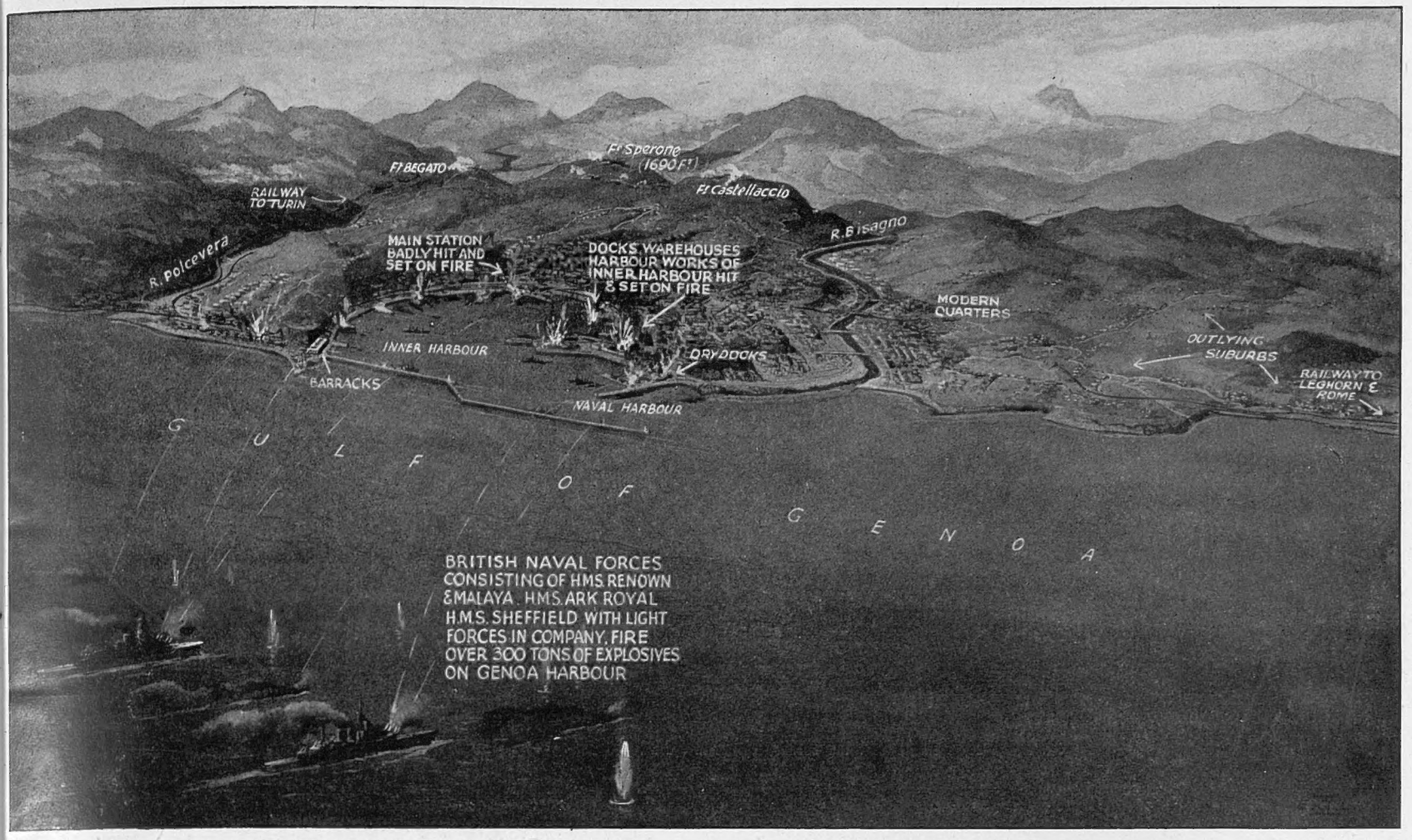
1941

January 9—Abyssinians raid Gubba, 25 miles from Sudan frontier. Italians evacuate.
„ 15—Haile Selassie enters Abyssinia—and raises royal standard.

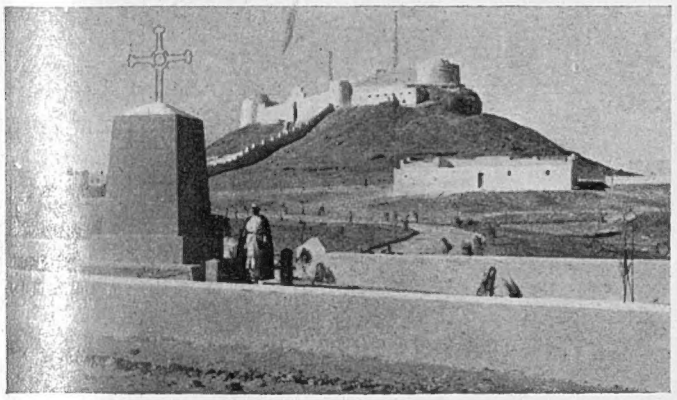
February 5—Constant pressure upon Italians along the Gondar road forced the retirement from the districts of Wolkait and Agade.

TRIPOLI—A VIEW OF THE CAPITAL CITY OF TRIPOLITANIA : WILL THIS NOW FALL INTO BRITISH HANDS?

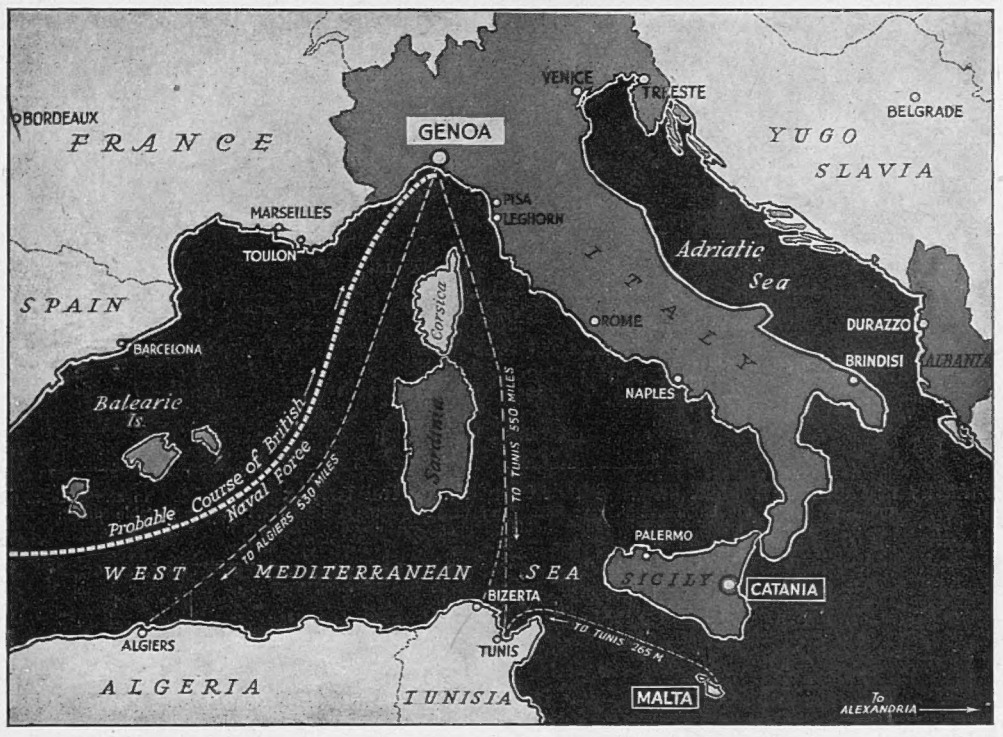
A great port, lying in a direct line with Malta and Catania, Tripoli is one of the most considerable cities on the North African coast. Possession of this jewel of the Mediterranean would give us a base only 220 miles from Malta and enhance our grip on the great Middle Sea. It has a population of about 82,000, of whom only 25,000 are Italians : it was captured from the Turks in 1911, since when the Italians have lavished millions of lira on the development of its harbours and on various governmental buildings



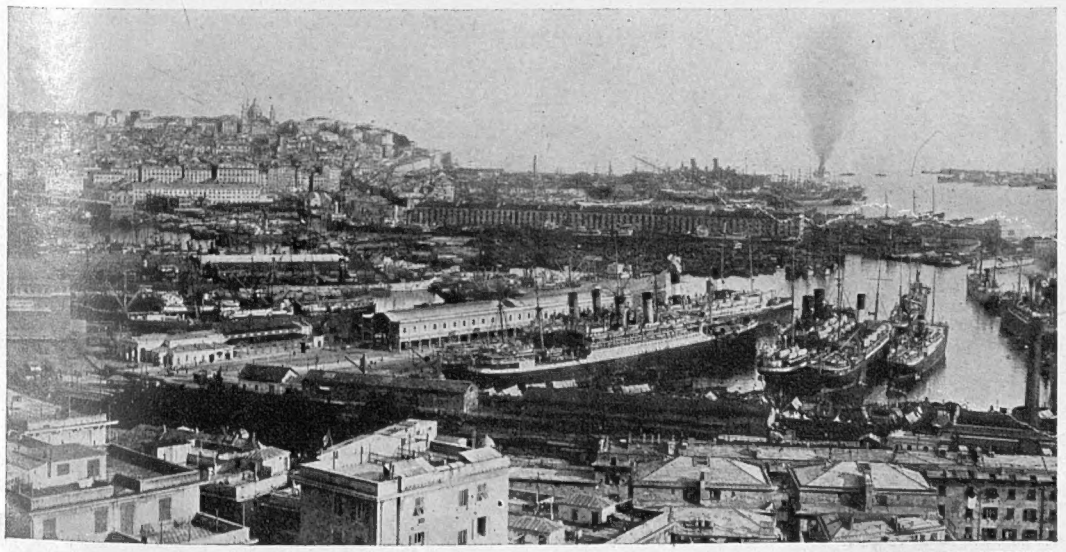
GENOA BOMBARDED BY VICE-ADMIRAL SIR JAMES SOMERVILLE'S SQUADRON, AT DAWN ON SUNDAY, FEBRUARY 9: Beset on all sides on land, Italy has now also suffered at the hands of the Navy. Ignoring the dive-bombers infesting parts of the Mediterranean, and sweeping boldly right into the Gulf of Genoa, the British Squadron attacked the great port of Genoa, and attacks were at the same time also directed at Leghorn and Pisa. The bombarding squadron consisted of the battle-cruiser *Renown*, the battleship *Malaya*, the heavy cruiser *Sheffield*, the aircraft-carrier *Ark Royal*, and other light forces. Military targets in and around the port of Genoa were subjected to a bombardment in which over 300 tons of shells were fired. The results were devastating. How the Italians must hate those oft-sunk (but still very potent) British ships of war!



ITALY'S "MODEL FORT" IN LIBYA: On the westward side of the Gulf of Sirte is Sebcha Fort (see map on left). This has been described in the Italian Press as "A Fairyland on the Fourth Coast." The fortress is supposed to contain "all modern improvements," and according to the Italians "will for thousands of years be a monument of Italian creative genius in North Africa"



THE WESTERN MEDITERRANEAN, WHICH IS SO COMPLETELY DOMINATED BY THE WARSHIPS COMMANDED BY ADMIRAL SIR JAMES SOMERVILLE



BUSIEST PORT OF THE MEDITERRANEAN: PART OF THE HARBOUR OF GENOA, SHOWING THE HUGE VESSELS WHICH CAN BE ACCOMMODATED AT ITS QUAYS

Even busier and more prosperous than Marseilles, Genoa is Italy's (and the Mediterranean's) most prosperous port. It has a population of 625,000, and is built on the hills around a crescent-shaped harbour: the biggest Italian liners afloat can easily be accommodated there. In addition to its port facilities, Genoa is also a centre of Italian heavy industry and armaments manufacture. The damage wrought here by the guns of the Fleet was considerable; and the bombardment of the port on Sunday last must still be reverberating throughout Italy and the whole Fascist party!

(*Continued from upper left*)

a fully armoured formation was making the 150-mile dash in 30 hours, which was to bring it across the Italian lines of retreat to compel the surrender of the retreating Benghazi army on February 7. By splitting in two, the British Imperial Force compelled the surrender of nearly 20,000 men, eight generals, and hundreds of tanks in retreat. The two forces caught the Italians on the open road and defeated them with a loss of six men and four tanks!

In East Africa:

1940

December 16—El Wak frontier post in Kenya recaptured.

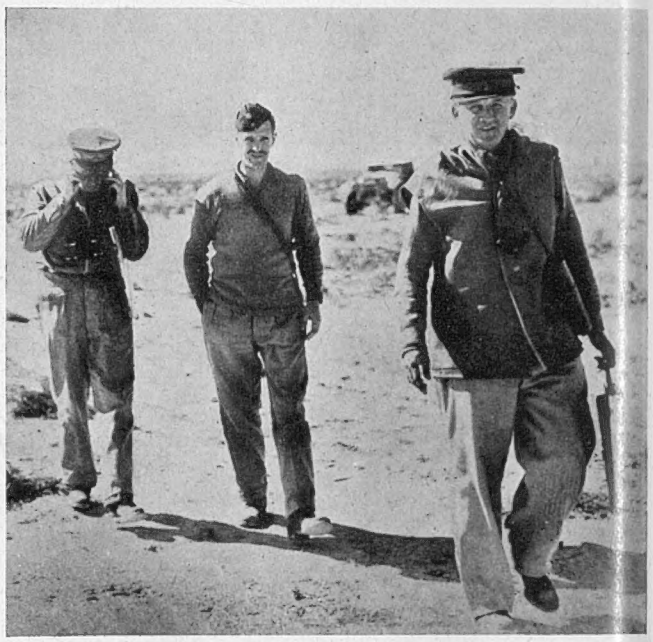
1941

January 14—Buna, outpost in Kenya, evacuated by Italians.
" 23—Two enemy outposts, El Gibo and El Sarden, 5 miles east of Lake Rudolf, taken.
" 31—Italian Somaliland raided. Kiamboni left in ruins.
February 5—Beles Gugani, 25 miles in Italian Somaliland, taken.
" 8—Gorai, in Abyssinia, captured by Imperial troops.

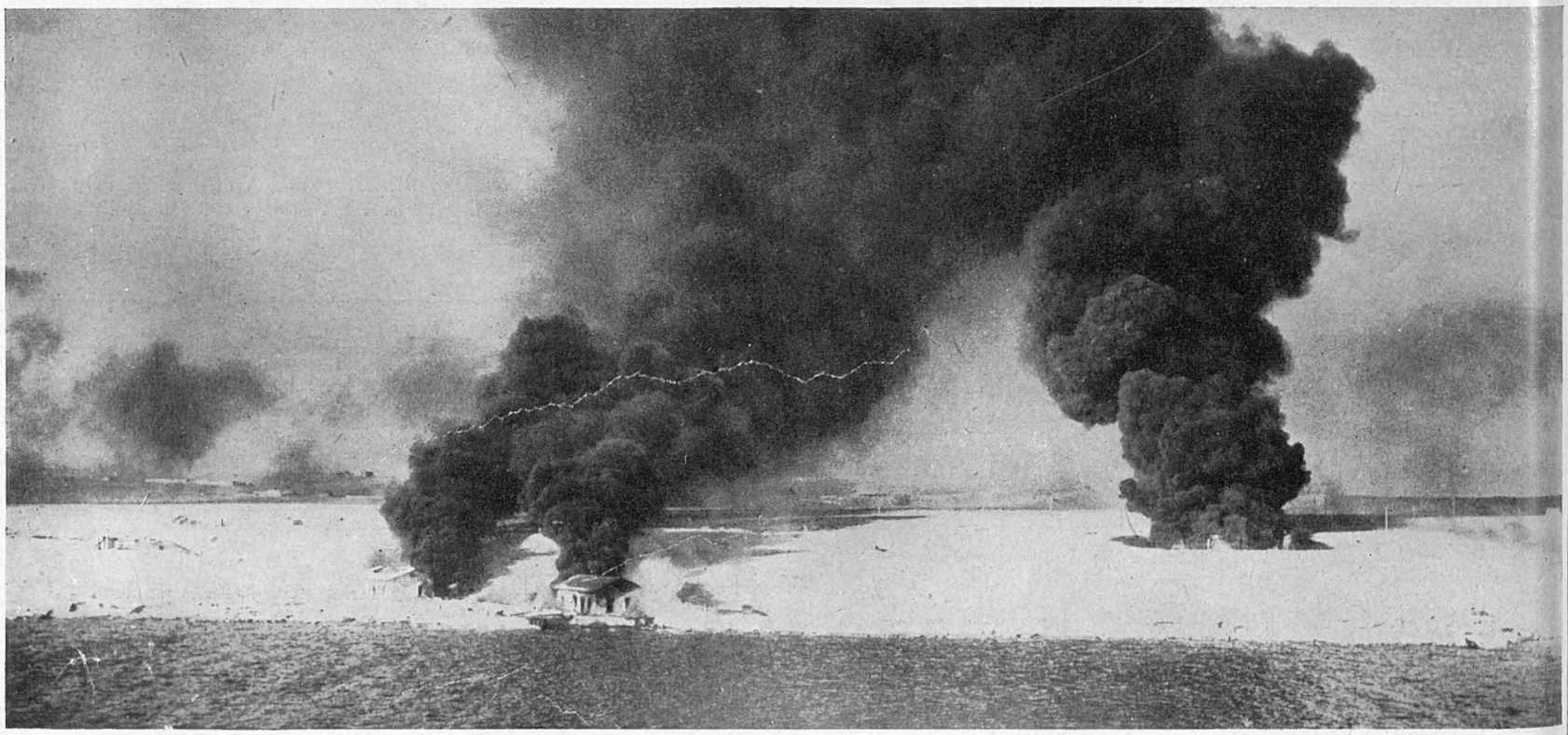
The CRACKING of the ITALIAN "EMPIRE" *(Continued)*

THE STORMING OF TOBRUK—BRITISH TROOPS ADVANCING BEHIND A CREEPING BARRAGE OF ARTILLERY FIRE : The town lies in the middle distance beyond the stretch of water. The attackers are loosely strung out and taking up their positions ; whilst over all is the dense smoke from the burning vessels in the harbour

INFANTRY IN FRONT OF TOBRUK WAITING TO ADVANCE INTO THE TOWN : This is seen in the background under the smoke from the burning Italian vessels. The harbour extends inland for a considerable distance, and offered ample protection for warships, tankers, supply ships and even a large liner



THE COMMANDER OF A PROMINENT FIGHTING UNIT : Inspecting the line on the other side of Tobruk. Although not stated on this official photograph, the Commander looks like Major-General O'Connor



THE HAVOC WROUGHT BY THE COMBINED LAND, SEA AND AIR FORCES BEFORE THE CAPTURE OF THE TOWN

There can be no question of the effectiveness of the preparations in front of Tobruk. For several days before the final attack our troops had waited during the worst sandstorm experienced in Libya for ten years. Before the actual signal was given waves of R.A.F. bombers made a terrific attack on the port : high explosives and incendiaries were rained down on the guns, harbour, military camps and other defences ; and very soon dense banks of smoke showed how effective the aerial attack had been. In the official photograph reproduced here some of the petrol and oil dumps are seen going up in black, oily smoke : other fires can be seen burning elsewhere in the captured town

ON THE ROAD DOWN TO THE SEA: HOUSES SHATTERED BY THE BOMBARDMENT IN TOBRUK. THE MEN ARE ALL NAVAL PRISONERS BEING MARCHED TO THE REAR

Above—SO FAR IN THE WAR THIS HAS BEEN A SOMEWHAT UNCOMMON SIGHT—SCORES UPON SCORES OF MEN OF THE ITALIAN NAVY TAKEN PRISONER. *On the left*—A CAPTURED ITALIAN ADMIRAL (IN CENTRE) BEING INTERROGATED BY A SENIOR BRITISH STAFF OFFICER

A VAST PARK OF CAPTURED ENEMY TRANSPORT OUTSIDE THE STILL-BURNING TOWN

Throughout the whole campaign in the Western Desert one striking feature has been the amount of material captured from the enemy. At Tobruk some hundreds of mechanical vehicles of all descriptions were captured: and here are some of them. Hundreds of others were destroyed by gunfire, or put out of action by the enemy. In the further operations which General Wavell may decide to direct, it is not unlikely that the loss of so much essential material will tell heavily against the Italians. Mobility is the order of the day, and with large quantities of lorries, tanks, and water-carriers gone, things may go very badly for them, especially in such an inhospitable country as the Western Desert

The CRACKING of the ITALIAN "EMPIRE" *(cont.)*

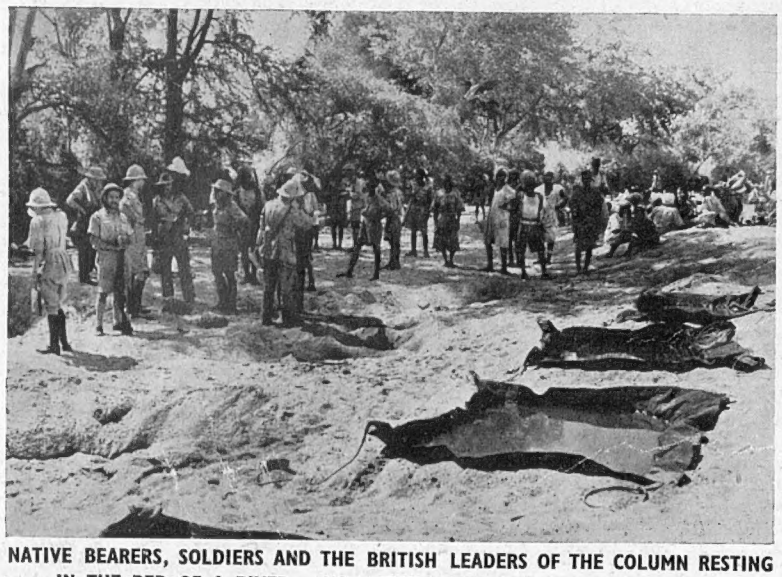
MOVING UP IN ABYSSINIA

British Officers Lead Haile Selassie's Forces into the Interior Against the Italian Garrisons

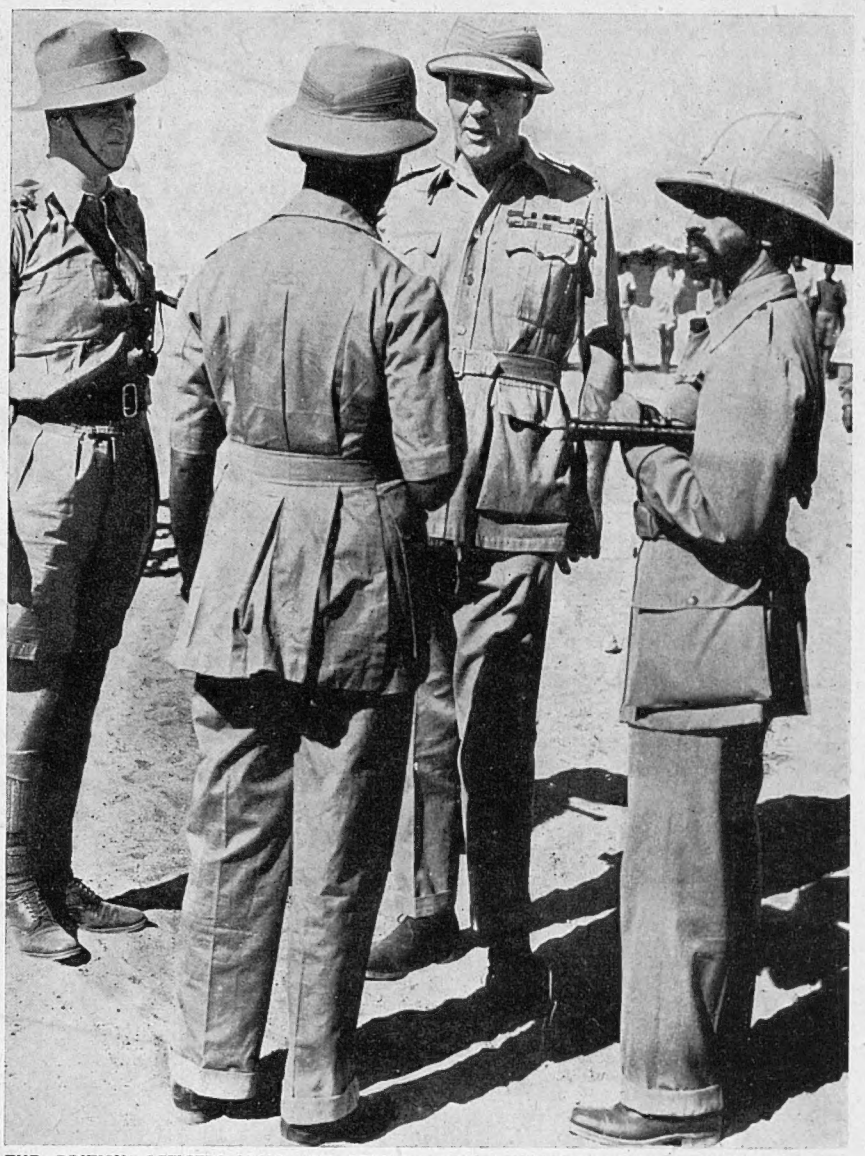
BRITISH LORRIES WHICH BLAZED THE TRAIL INTO ETHIOPIA FOR THE CONVOYS OF TROOPS AND CAMELS TO FOLLOW

TURBANED INDIAN SOLDIERS, WHO FORMED PART OF THE ADVANCE PARTY, HALTED IN THE DEEP ABYSSINIAN JUNGLE

THOUSANDS OF CAMELS, TRADITIONAL METHOD OF TRANSPORT, ARE POURING INTO THE COUNTRY LOADED WITH AMMUNITION AND STORES. THESE TROOPS ARE TO HARASS AND ATTACK ENEMY POSITIONS



NATIVE BEARERS, SOLDIERS AND THE BRITISH LEADERS OF THE COLUMN RESTING IN THE BED OF A RIVER. NOTE THE METHOD OF RATIONING THE WATER SUPPLY—IN TARPAULINS SPREAD IN THE SAND



THE BRITISH OFFICERS WHO ARE LEADING THE ETHIOPIAN TROOPS INTO ABYSSINIA IN CONFERENCE WITH THE EMPEROR, HAILE SELASSIE

NATIVE TROOPS AND BEARERS SECURING THEIR WATER SUPPLY FROM A WELL DUG IN THE JUNGLE

On all sides the attack has been launched—Eritrea, Somaliland and Abyssinia itself. Last month it was revealed that a British military mission was already at work in the Ethiopian interior, preparing and guiding the Emperor's subjects in their revolt against Italian rule. Now it has been announced that the first battalion of Ethiopian troops are actually operating in Abyssinia, led by an Australian officer and four Australian N.C.O.s. They are fully armed, and have been trained to fight for their country with better equipment than they possessed when Italy so cruelly ravaged their lands in 1935. Cut off as they are from all reinforcements and sources of supply, the Italian garrison may well quail at the prospect which now confronts them

A FRENCH MACHINE-GUN CAR IN FRONT OF THE "KSAR," OR NATIVE QUARTER OF MÉDÉNINE IN TUNISIA: Here a large part of France's Colonial Army is still in being, ready to follow the lead of their Commanders, now taking orders only from the Vichy Government

The CRACKING of the ITALIAN "EMPIRE"—*(cont.)*

The TUNIS TOUCHSTONE

The "Major Mystery" of French North Africa Now Controlled for Vichy by General Weygand

By FERDINAND TUOHY

ONE does not write these days against the calendar so much as against the clock. At any moment we may hear of the Nazi paw shooting out to Tunisia, although the bombardment of Genoa by the Royal Navy has probably seriously affected any existing plans!

Weighing heavily on the French must be the thought of how off the track they were in their estimate of Mussolini's Italy as foe. It is now evident that had even a mutilated France stood in the war, fighting with her African forces and her Fleet, not only would Generals Noguès (C.-in-C. designate) and Wavell have crunched Graziani like a match-box, but Admirals Cunningham and Esteva, supported by the air arm, must have ere this contrived a decisive landing in Sicily. Despite the events of May-June, the Allies could have forestalled Nazi aid and crumpled Fascist Italy.

Yet to think that the fear was all the other way—fear of Tunisian invasion and of African thunderbolts generally! To think of all the misplaced hullabaloo that was created by the Fascist clamour for "Tunis! Corsica! Nice!" at the close of 1938.

Across to the two first journeyed a compelling little company: Defence and Prime Minister Daladier, Admiralissimo Darlan, Air C.-in-C. Vuillemin, Army Chief of Staff Georges. Only the sailor carries on to-day. The politician is detained, the airman and the soldier have been "voluntarily retired." But how all four must be recalling what they saw and heard in Tunisia. Such teeming crowds! Such popular exultation! Such vociferous, or passionate, preference for France over all other foreigners. And such pledges given in return by the visitors. With the Fascists seemingly on three sides and with Tunisia itself honeycombed with insolent young fellows openly bossing the big local Italian population, the Tunisians—French, natives, Maltese, *et al.*—needed comforting, or thought they did, since their dread was in reality generated by Fascist show of warlike fever and boasts of inevitable destruction rained from the skies: so much terror propaganda aimed at gaining the spoils without fighting.

Meanwhile, it was impressed on the visitors as upon those of us on their special train, that the invasion danger-zone was the Gulf of Hammamet forty miles south-east of Tunis city and hardly more from Italy's Pantellaria island base. A direct challenge to the naval fortress of Bizerta was not anticipated. The only other door of entry, on the Libyan border, was claimed to be adequately barred by the Mareth Line, in the heart of which we watched a gorgeous military parade, camels to tanks, outdo any Hollywood.

But a swift, mechanised landing was possible on the vast sandy bay of Hammamet, whence an upward thrust helped by air-borne and copious Fifth Column intervention, could assail Tunis and Bizerta from the rear.

With Hitler mobilising in Sicily and with his array of experts reaching back to the Brenner, as once the Condor Legion supervised Franco's "behind-the-lines," I should say that this specific danger still exists, though it may have become overshadowed by the menace to Bizerta direct by that technique of surprise in which parachutists and troop-carrying planes predominate. Landing would not be difficult on the lakes or *chotts*, and on smooth, rolling open country, with big airfields at Tunis and Bizerta. The Lake of Tunis, which could take a swarm, was for long the air terminus. It is further obvious that after Italian and German Commissions of Control have been on the spot for many months, thousands of long-located Fascists reinforced of late, no doubt, by Nazi "tourists," could stage a maximum of "Dutch invasion" tricks, paralysing and sabotaging, and joining with air-borne invaders whose advent would stun the natives. (These total 2½ millions, and in view of loose statements regarding the relative number of Italians to French, the former claimed 127,000 against 94,000.)

GENERAL NOGUÈS, French Commander-in-Chief in Tunisia during the very anxious months following on the French capitulation. With his very considerable following amongst the Army in Africa, and with General Weygand also present in Tunisia as Vichy's representative, French Africa may still provide Hitler with a headache!

We here collide with a question governing events almost as much as the orders that go forth from Vichy, or the popular will of adjacent French North Africa. Under the Armistice terms, both Bizerta and the Mareth Line were to be demilitarised under Axis eyes. So that when we hear of Weygand having strengthened the French military machine in Tunisia and elsewhere, it is hard to see how this is reconcilable with a demilitarisation effectively carried out. What has Weygand been able to do about that? Even the minefield defences of Bizerta were to have been revealed. Have they been?

Major mystery, and one that extends in the three elements to all French North Africa.

As an example, what is there to prevent the Italian army based on Tripoli—a separate force from that being thrashed by Wavell—from moving across a demilitarised Mareth Line into Tunisia coincidently, say, with *Luftwaffe* and other descent on Bizerta and Hammamet? Tripoli is scarcely a hundred miles from the frontier and the fillip that would be given to discredited Mussolini by such an entry into long-shrieked-for Tunisia needs no emphasis.

"It is certain [I quote *The Times*] that every Frenchman and every Arab has been relieved and delighted at the recent disasters inflicted by British prowess on the greedy and oppressive Fascist colonial empire. It would be in the highest degree repugnant to them to collaborate even passively in any step calculated to retrieve or mitigate such disasters. But initiative and resolution, if not resources, are still lacking."

Whatever these resources amount to, it is clear they are of the military variety, and that Hitler will not rest until he can control them, the more so as he affects not to trust "ambiguous" Weygand. But there are a dozen other reasons why Hitler should wish to obtain a foothold in Tunisia, preferably by guile, since Vichy acquiescence or even supineness could be capitalised in the Protectorate, but, failing that, by a typical *coup-de-main*. By such a development Hitler might hope to:

Keep our Mediterranean Fleet so occupied that it could not reinforce the Atlantic, and get the chance to attack it by dive-bomber, U-boat, and Nazi-stiffened Italian war vessels;

Cut the Mediterranean in two, rendering the R.A.F.'s protection of shipping in the Sicilian Channel far more difficult and sending much of this tonnage on the month-longer journey round the Cape, when it could be attacked in the Atlantic as part of the new U-boat campaign;

Bolster up his Axis ally in Libya by means of specialist formations and equipment ferried from Sicily to La Goulette (near Tunis), hugging as much of the African coast as possi le, and via Pantellaria down coastal waters to the ports of Sousse and Sfax (greater hostages were given to fortune in Norway);

Bar a Wavell advance to the Tunisian border, where the arrival of De Gaulle-ist victors, Spahis, French Colonial Infantry, in O'Connor's striking force, could upset the apple-cart;

Secure Italian communications with Tripoli;

Eliminate an encircled Malta;

Control the rising spirit of French North Africa and put a decisive spoke in Weygand's wheel;

Hold his Italian ally in a vice from the Brenner to the Sahara, removing the risk of a separate peace;

Provide the right arm of an eventual pincers on Egypt, the left arm to spread from an initial push to the Ægean behind the Greek armies;

Bolt his "second front" in the south as part of defensive strategy while attacking the British Isles;

Progress a stage towards coveted Morocco and the Atlantic coast, even Dakar;

Get within raiding distance of Free France's Fort Lamy on the fringe of the once-German Cameroons, bastion of the crucial Chad region and desert transport junction for all north-west Africa;

Heighten morale in Germany by the launching of African Adventure long-yearned-after, whether or not things have gone the length of preparing in hot-houses for it.

Yes, the lure of Tunis for Hitler is certainly all there . . . but if he does get across, can he maintain himself? The answer to that may rest largely with a second query: Will Vichy submit to his coming?

Hitler in Tunis means just one thing to us, whatever Vichy is forced or jockeyed into allowing. We shall attack him before he starts, on the way over, and when he arrives. We shall do this on the surface of the sea and beneath it, in the air, maybe finally on land. We shall not hesitate to bomb an occupied Bizerta as if it were Boulogne. Nor would there be any more call for a fettered France to attack us in return than has existed as a result of the bombing of the Channel invasion ports. Hitler in Tunis could be made a hazardous operation for him, and we could not hold back. The stakes being too high.

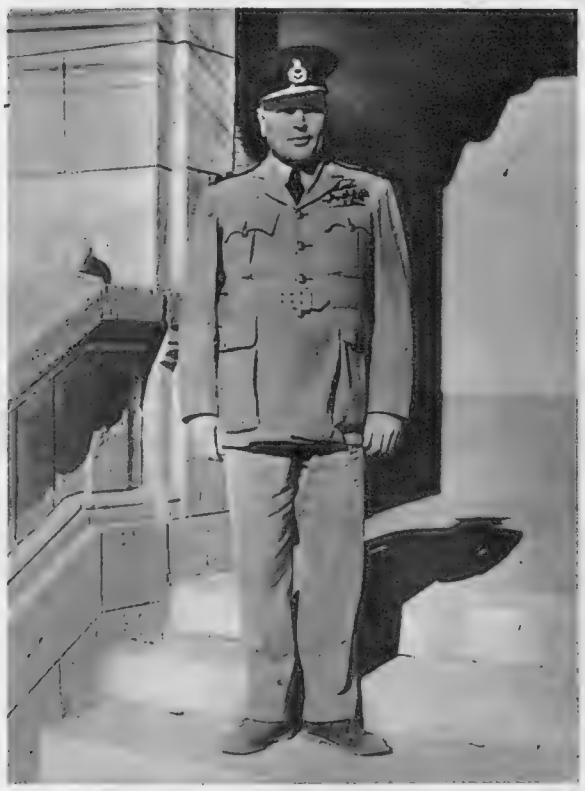
What Weygand and Darlan would like is plain. They want to stay out of the rest of the war, in Africa and everywhere else. They see a chance of France, bled white last time, growing progressively stronger in relative manhood as the continuing war exhausts the new generation of others. If not to be admired, it is at least an understandable attitude. But whatever it is, Hitler has seen through it, as he likewise calls a halt to French running with the hare, etc., the French attempt to wait and see what happens to Britain which, in the estimate of too many French people, would treat France excellently if she won, so why worry about what they do one way or the other in her regard?

"Are you going to stay inactive," asks General De Gaulle, especially of Algeria, with its 800,000 of French descent, "with your arms by your side, humiliated and broken-spirited, when the fate of France and her Empire are being decided at your guns' range, when the men of General Catroux have entered Tobruk, and those of General de Larminat take Murzuk?"

We should very soon know the answer, with Tunis as the touchstone.

b

"THE VAST ITALIAN AERODROME OF EL ADEM, THE LARGEST IN LIBYA, IS NOW AN AIRCRAFT MORGUE"— So ran an Air Ministry bulletin issued on January 16. Here is proof of that statement. Thanks to R.A.F. bombing, the remains of more than eighty-seven Italian aeroplanes were found lying unserviceable when we arrived at El Adem. The Italians evacuated the place in haste, leaving masses of provisions, aircraft fuel and equipment behind them



THE MAN WHO DID IT: Air Commodore Collishaw, in actual charge of R.A.F. operations in the Western Desert since the opening of the campaign in December

THE REMAINS OF AN ITALIAN S.M.79 BOMBER: Every scrap of fabric has been burnt off this big three-engined aircraft, leaving merely a twisted heap of metal tubing

THE WRECKAGE OF A GROUP OF ITALIAN FIGHTERS AND BOMBERS—ONE OF THE REASONS FOR THE ABSENCE OF ITALIAN AIRCRAFT FROM THE SKIES DURING THE FIGHTING IN THE WESTERN DESERT

SOME OF THE ENEMY AIRCRAFT DESTROYED AT EL ADEM: THESE ARE TWIN-ENGINED BERGAMASCHI AEROPLANES: When R.A.F. officers arrived, the place was deserted, and the only sign of movement was the flutter of a tattered windsock. For an area of two square miles there was no sign of life. Derelict aircraft were dispersed as far as the eye could see, and in one hangar alone were twenty-two burnt-out skeletons

THE RESULTS OF R.A.F. BOMBING ON ONE OF THE WORKSHOPS OF THE AERODROME

The most surprising aspect of the campaign in the Western Desert was the almost total elimination of the Italian Air Force from the skies above Libya. And the most surprising contribution to this achievement was the complete obliteration of Italy's vast aerodrome of El Adem, biggest and most important of all the air bases in the area of campaign. The R.A.F. began their attacks on this even before the Army of the Nile began its series of gigantic leaps forward: when El Adem was finally reached by R.A.F. officers a scene of the utmost desolation confronted them. Eighty-seven aircraft had been destroyed completely, and hangars, workshops and quarters had been gutted. The Italians had made El Adem a very comfortable base, with billiard tables, shower baths, tennis and badminton courts, and up-to-date kitchens. To-day, all the workshops and hangars are in ruins, only the large electric power station remaining. By their complete eradication of air base and Air Force, the R.A.F. were able to reconnoitre and bomb the enemy during the desert operations almost without opposition

The CRACKING of the ITALIAN "EMPIRE"

(Continued)

THE CONQUEROR RETURNS IN TRIUMPH : After the British forces had taken the town of Tobruk, this soldier went out foraging for provisions. He returned to his unit in great style, with his stores under both arms—and with a donkey commandeered for transport service! After marching and fighting for days without intermission, the Army rules about shaving and "cleaning up" generally were obviously suspended for the time being!

A PILE OF HEAVY BOMBS INTENDED FOR RAIDS ON THE BRITISH FORCES LEFT BEHIND BY THE RETREATING ITALIANS ON ONE OF THEIR ABANDONED AERODROMES

HERE IS THE SAME PILE OF BOMBS WITH THE CAMOUFLAGE REMOVED : Unfortunately for the Italians they had not the aircraft for the disposal of these after the R.A.F. had finished with them

DURING THE MOVE WESTWARDS OF THE ARMY OF THE NILE : Men of a famous British Rifle Regiment testing the water found in one of the wells abandoned by the Italians—a necessary precaution, as during their campaign in Abyssinia the Italians carefully poisoned the wells used by the natives

CLEARING UP AFTER THE CAPTURE OF TOBRUK : During their retreat westwards, it was found that numerous mines had been laid by the Italians to trap the unwary. Here a party of British sappers are at work removing a minefield laid along the road leading into Tobruk

THE BEDOUIN WELCOME THEIR DELIVERERS : After years of repression and suffering at Italian hands and under the stern regime initiated by Marshal Graziani, the Bedouin of the Desert have now been freed by the advancing British forces. Here a party of friendly natives are giving British officers valuable information as they push along the Tobruk Road towards the next point in the advance

MEN OF A FAMOUS INFANTRY REGIMENT PREPARING A LINE IN THE TOBRUK AREA : Despite the rapidity with which the Army of the Nile advanced westwards, much of the fighting was severe and, at times, protracted. The advance was not haphazard, each set of positions being carefully constructed before the final assaults were made. There was considerable pick-and-shovel work for the advancing infantry before they were able to get to closer quarters with machine-guns and bayonets

WHERE WILL HITLER STRIKE?

The Possibilities as Indicated by the Dispositions of the German Army in Europe

SPECULATION about the coming German offensive is deplored by those who maintain that "only Hitler knows," and his troop movements are "all a bluff." But even the most mobile of modern armies cannot be shifted from one side of Europe to another without prolonged bother and expense—at least sixty-four trains are needed to move one complete division—and the present dispositions of the German forces must have something more than bluff behind them. For months prior to the invasions of Scandinavia and France we *knew*—indeed, we constantly wrote—that the Germans were massed and manœuvring on the frontiers of Holland and Belgium and the Baltic shores. To-day we know—what?

The answer is contained, so far as authenticated reports may be pieced together, in the accompanying map. According to this, it will be seen that the greater part of the German reserves, as differentiated from specialised assault, garrison, and invading troops, are concentrated to-day at two points of the European land-mass. One is the Low Countries, the other Southern Germany and Czechoslovakia. And they are there for a purpose. Let us investigate this.

The purpose of the first concentration is simply explained. Hitler would invade us if he could. An opportunity might, to his mind, present itself any day, so that great army is kept in readiness just across the Channel. It is supported by subsidiary invasion forces in Norway and north-western France. These troops would also be ready to oppose any attempted British landing on the shores of north-western Europe. Germany's main line of defence still runs from Holland down through Belgium and north-eastern France, just as it did in the last war, save that the Channel coastline is now in German hands.

The purpose of the other great reserve is, however, rather more complex, and requires, perhaps, the most careful attention. It could be employed in two ways.

Possibly the original intention was to use part of that overwhelming army—some 2,500,000 men—to smash through Turkey via Rumania and Bulgaria and reach the oil wells of Iraq and Iran, finally the Suez Canal, what time Italy reached the same destination by a desert route. Thus an advance guard was sent to Rumania. But Mussolini and the rotten Italian Army spoilt that plan. Hitler cannot count on the Italian side of a pincers movement round the Middle East to-day. Moreover, Mussolini's Albanian blunder has given rise to a most unpleasant situation.

This is that Greek forces may shortly be on the borders of Yugoslavia. Thus they could open up communication again with the valuable mineral deposits of that country, and they could prepare advanced bases for an attack on Austria via the Adriatic and Trieste.

So the German forces massed in the centre of Europe might *have* to be used very soon for (1) the reinforcement of Italy and (2) the protection of Germany itself. Although about 300,000 are now in Rumania up against Bulgaria, an advance through Yugoslavia might be the best course. (Unless Hitler does decide to gamble frantically, and concentrate all his strength on a sudden dash to the Bosphorus and beyond.) An invasion of Yugoslavia would not necessarily bring in Turkey. The Yugoslav Army is perhaps the best in the Balkans, but Fifth Columnists have doubtless been at work in that country.

Once Yugoslavia were secured, the Germans would probably aim for Salonika, advanced base on the Ægean, as they would similarly aim if Bulgaria were the chosen pathway. From our viewpoint much would now depend upon the attitudes of Turkey and the Soviet Union. The latter would doubtless remain quiescent. Would Turkey move? The indications are that she would, and the Turks are fighters.

Yet another possibility, widely discussed, is the despatch of the German reserves through Italy to invade North Africa. Is that feasible when we command the Mediterranean and General Weygand's forces in Tunisia and Morocco stand ready to protect the last hope of conquered France? More likely, perhaps, is a German drive through Spain to Gibraltar, with the object of closing the Mediterranean at that end. Such a project, however, might hardly be worth while, especially as we have had plenty of time to prepare for such a contingency from the Gibraltar end.

No; failing an invasion attempt on Britain, or prior to an attempt, the German Army is likely to be used in the classic way—working on interior lines outwards, through the softest spots, to secure frontiers that might be used for an assault on Germany.

DONALD COWIE

GERMANY'S PROBLEM: THE QUESTION OF HER MOVEMENTS BY LAND IN EUROPE: With vast numbers of troops in Norway, on the Russian borders and in Occupied France, other German columns have now made their presence felt in Italy, Rumania and Bulgaria. The possibilities of further movements by Germany are discussed in the accompanying notes

OUR LATEST MERCHANT-SHIP LOSSES

The Influence of Winter Weather Conditions on the Submarine Campaign

THE extraordinary fluctuation of merchant-ship losses is due to a variety of causes, and it was observed in the same way during the last war, although not, perhaps, to quite the same extent.

To begin with, of course, there is the weather, which can have a great effect both on the fortunes of the submarine and of its quarry. A gale with heavy seas will often prevent a U-boat making an attack, will make her attack far less certain if she does get the opportunity, and, on the other hand, will often scatter a convoy and leave ships helpless while repairs are being carried out—or only able to proceed at very reduced speed. The phase of the moon will also have an influence, for the long dark night gives the merchantmen the best opportunity of slipping through; in bright moonlight the submarine has more chance of spotting the bigger ship than of being spotted herself.

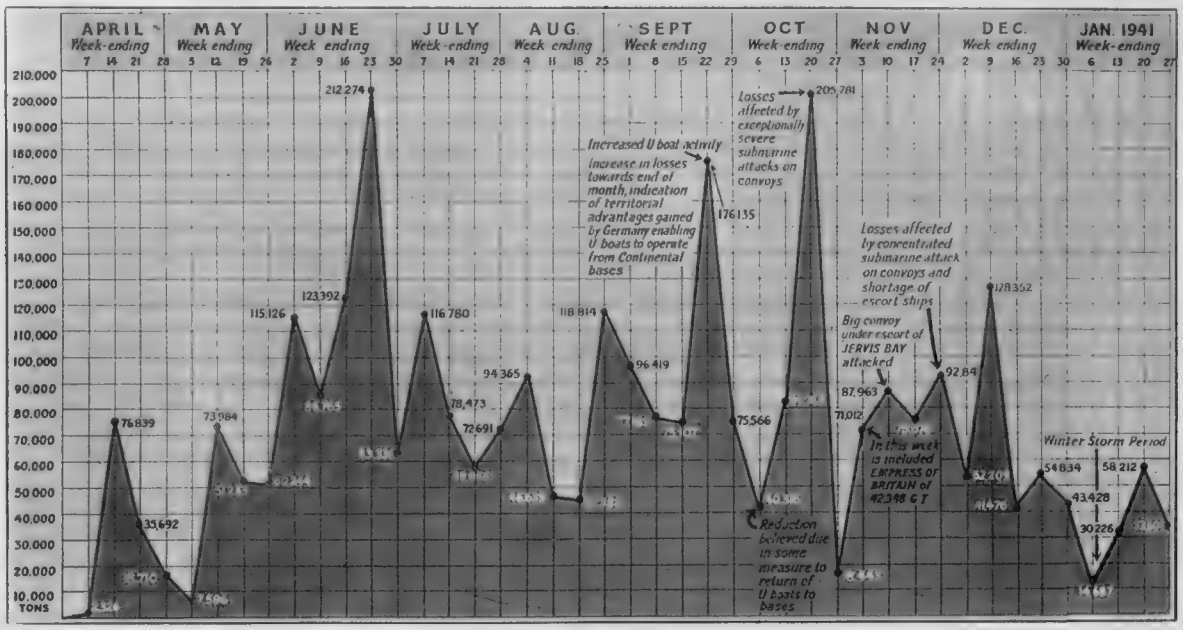
Bad weather also has a big influence on the chances of successful attack by aircraft or motor torpedo-boat, but in each case it is very much to the advantage of the merchantmen.

A single big ship will, of course, make a great difference to the figures in any week, and the number of convoying vessels available at any particular spot at a particular time is also a great consideration. In spite of the successful efforts that have been made, it is admitted that the Navy is still very short of small craft, so that some convoys are bound to be better protected than others. The figures will also jump upwards if one of the surface raiders ventures across a trade lane after she has, possibly, spent weeks off the beaten track to allow the pursuit to die down.

One of the greatest influences is undoubtedly the cycles of duty by the crack German submarine commanders, for there is no doubt half a dozen of their men at most have accounted for by far the greater part of the success scored by the U-boats. Up to now, it would seem that the Italians have not contrived to produce any submarine captain of particular note; had they done so there is no doubt that the propaganda department at Rome would have made just as much fuss over him as the Germans do over their few aces, and would have exaggerated their prowess just as much, for if Goebbels' accounts of his few striking men are true, none of the other German submarine captains, airmen, or surface-raider commanders have achieved anything.

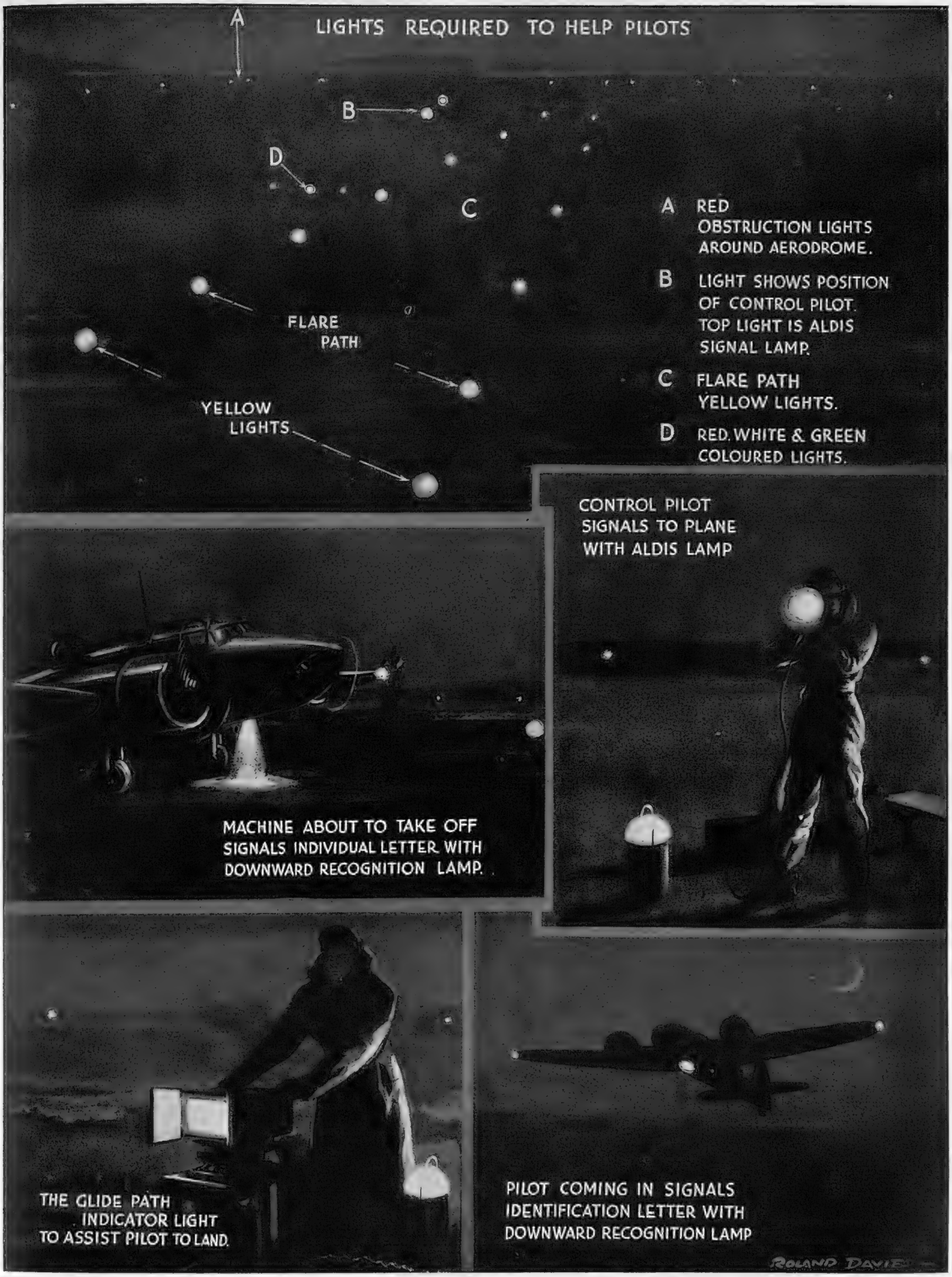
The greatest factor of all is, undoubtedly, pure luck. That is always a very big factor in submarine operations, whether they are against warships or merchantmen, but particularly in the latter case. With all precautions taken with regard to information and wireless it is pure luck if one of the outlying submarines chances to strike the track of shipping which is constantly being changed, and it is again a matter of luck whether she finds herself in an advantageous position to fire into a convoy or whether she has not the least chance of success.

FRANK C. BOWEN



BRITISH, ALLIED, AND NEUTRAL SHIPPING LOST AS A RESULT OF THE U-BOAT CAMPAIGN SINCE APRIL LAST

The very remarkable diminution in the losses during the past three months is shown in striking fashion in the above diagram

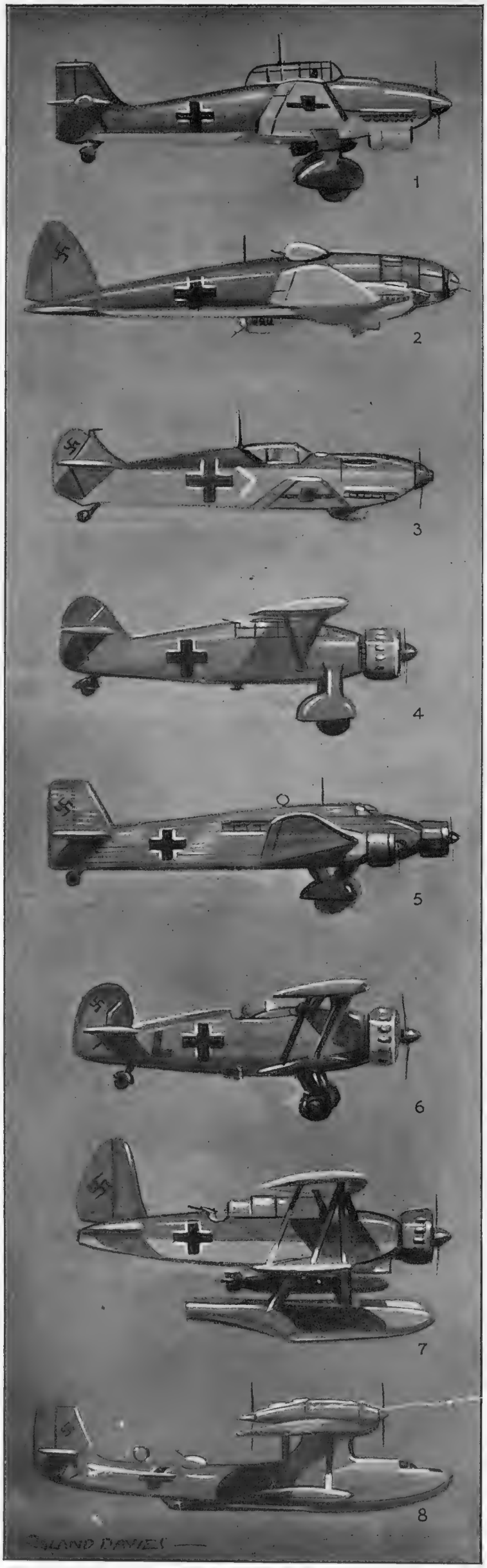


HOW A NIGHT-FIGHTER PILOT IS TRAINED

The Combination of Flare-path and Signal-lights which Enable Him to Take Off and to Land

—Drawings by Roland Davies

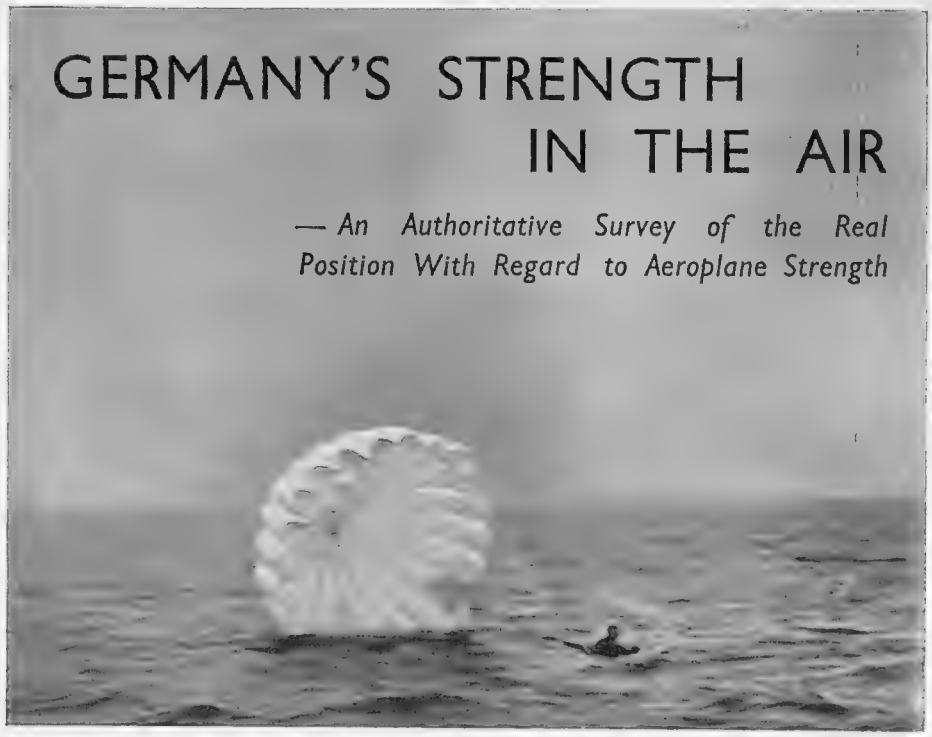
Flying by night is not an easy business : in addition to the very high standards set by the R.A.F. for its fighter-pilots, those selected for night operations must have other qualities, which only become apparent during the course of their advanced training. This series of drawings shows some of the points in connection with night flying and the manner in which the pilot leaves the ground and, later, makes his landing in the dark. To begin with, the pilot ignores all indications of his position on the aerodrome other than that conveyed by the special lights shown in the top drawing : a group of red, white and green lights, shaded from above and thus safe from observation by hostile aircraft, marks the taxi-ing point; the pilot leaves this area to take up his position at one of the flare-paths, indicated by yellow lights—this path always points directly into wind, and the pilot has no other means of discovering this important point at night in the absence of visual observation. Away to the left of the flare-path is a light apart from all the others : this is where the Control Pilot stands, with his Aldis signal-lamp. All around the perimeter of the aerodrome are little red obstruction-lamps to give the pilot indication of danger. When the pilot is ready at the end of the flare-path, he signals with his downward recognition-lamp, giving the individual letter of his aircraft. If all is clear for the plane to take off, the Control Pilot signals with a green light : if the path is not clear, he gives a red light—and the aircraft must wait. Once he opens the throttles the pilot follows the path of the yellow flares until he is air borne and climbing safely away, his navigation lights showing his course. At the end of his circuit, or after having carried out whatever duties he has been detailed for, the aircraft returns over the aerodrome to land. Again he flashes his recognition signal and then waits for permission before beginning his glide in. If all is ready, the "glide path indicator" is switched on, as shown in the bottom left-hand drawing—and again the Control Pilot is able to give valuable assistance. If a green light shows, the aircraft is in the correct position for landing and can come right in : if, however, he is too high, a yellow beam shows ; a red beam indicates that he is too low. In both these cases another circuit of the aerodrome is made, until finally the pilot is given the green light



***On left*—THE PRINCIPAL TYPES OF AIRCRAFT AS USED IN THE GERMAN "LUFTWAFFE"** The modern Air Forces of the big Powers to-day comprise a number of different types of aircraft. Not only are there fighters and bombers, but also Army Co-operation types, trainers, reconnaissance aircraft, and a number of others, each of which embodies in its design features which enable it to carry out its specialised duties. Without claiming that this list is in any way complete, we give here eight of the principal types now in service with the German *Luftwaffe*: these are (from top to bottom) **1**—the Junkers 87 dive-bomber, prominent in Poland and the Low Countries, and now being used in the Mediterranean; **2**—the Heinkel 111K bomber, used for both day and night raids on Britain: this is only one of a number of bomber types used by Germany; **3**—the Messerschmitt 109, principal fighter aircraft, which has so far been the spearhead of German air offensives; **4**—the Henschel, an Army co-operation type, corresponding to our own Westland Lysander; **5**—the Junkers 52, a comparatively slow and out-of-date monoplane with three engines, largely used for troop-carrying: this type would be amongst those used in an air-borne invasion of Britain; **6**—the Bucker Jungmaister, one of the many types of trainer aircraft used to instruct the coming fighter pilots; **7**—the Arado, a torpedo-dropper and reconnaissance aircraft, corresponding to our own Swordfish but not so efficient; and **8**—the Dornier Do 18K, a reconnaissance and bombing aircraft, of very low speed, which has been used largely over Scotland and the coast

GERMANY'S STRENGTH IN THE AIR

— *An Authoritative Survey of the Real Position With Regard to Aeroplane Strength*



WHAT HAPPENS WHEN AN ENEMY BOMBER IS SHOT DOWN IN THE SEA: This German airman is the sole survivor of a Dornier bomber. The picture was taken as he landed in the North Sea off the East Coast, and before his parachute had collapsed about him. In discussing the question of Germany's air strength, we must not forget the allied question—of man-power. Already the German Air Force has lost thousands of her bravest and best in combats over this country and in bombing raids—to say nothing of the previous losses encountered by the *Luftwaffe* over Belgium and France. A point may well be reached when trained pilots and air crews will become increasingly scarce!

SECRECY, designed as much for propaganda as for concealment, has veiled the figures for the strength of the German Air Force ever since it was founded by Göring, Milch and Udet in 1934.

Fantastic figures have been quoted both for the total strength and the so-called "first-line" strength of the *Luftwaffe*, particularly in America. Recently the figures have been sifted and analysed in the light of knowledge gained from a year and a half of war. Stripped of their fiction and founded on sober fact, the estimates of the strength of the *Luftwaffe*, while formidable enough, give a much more balanced picture and one which we can face with a fair degree of confidence in our power to meet and break it.

A detailed and authoritative survey of the composition and probable strength of the *Luftwaffe* was given by Peter Masefield, Air Correspondent of the *Sunday Times* and Technical Editor of *The Aeroplane*, writing in the *Sunday Times* on February 2. These figures, which are based on known facts, show that although the total strength of Germany's Air Force, counting all transports and trainers, probably amounts to 40,000 machines, the operational strength at any one moment cannot exceed 9,000 fighters and bombers, and may well be less. In fact, the *Luftwaffe* is not likely to be able to assemble more than about 6,000 aeroplanes with which to open an assault on Great Britain. Even this number might well be whittled down by the difficulties of practical operation from a limited number of aerodromes. So far, there has been no record of the *Luftwaffe* having been able to put more than about 2,500 aeroplanes in the air on any one day.

THE TWO SUPREME COMMANDERS OF THE GERMAN AIR FORCE—AIR GENERAL ERHARD MILCH (*on left*) AND GENERAL ERNST UDET: It is generally recognised that it is to General Milch that the German nation owes the vast expansion in recent years of the *Luftwaffe*. As right-hand man of Field-Marshal Göring, it is he who decided on the types of aircraft to be built and the methods of training the air personnel, as well as on operational methods. Associated with Milch is Ernst Udet, air ace of the last war, when he rivalled Richthofen in bringing down sixty-two Allied planes single-handed

At present three Air Fleets are operating against this country. Three other Air Fleets of the *Luftwaffe* are based respectively in Eastern Germany, in Austria and in Rumania. An Independent Air Unit with a strength equivalent to an air fleet, or slightly less, is now in Italy.

Each Air Fleet is made up of three Divisions and one fighter Air Corps with total of some 1,700 aeroplanes. With reserves and transport aeroplanes attached, the strength of an Air Fleet is brought up to some 2,750 machines, of which only about 1,300 are available for operation at any one moment because of the need for overhaul and repair. This 1,300 in each Air Fleet is its true "first-line" strength.

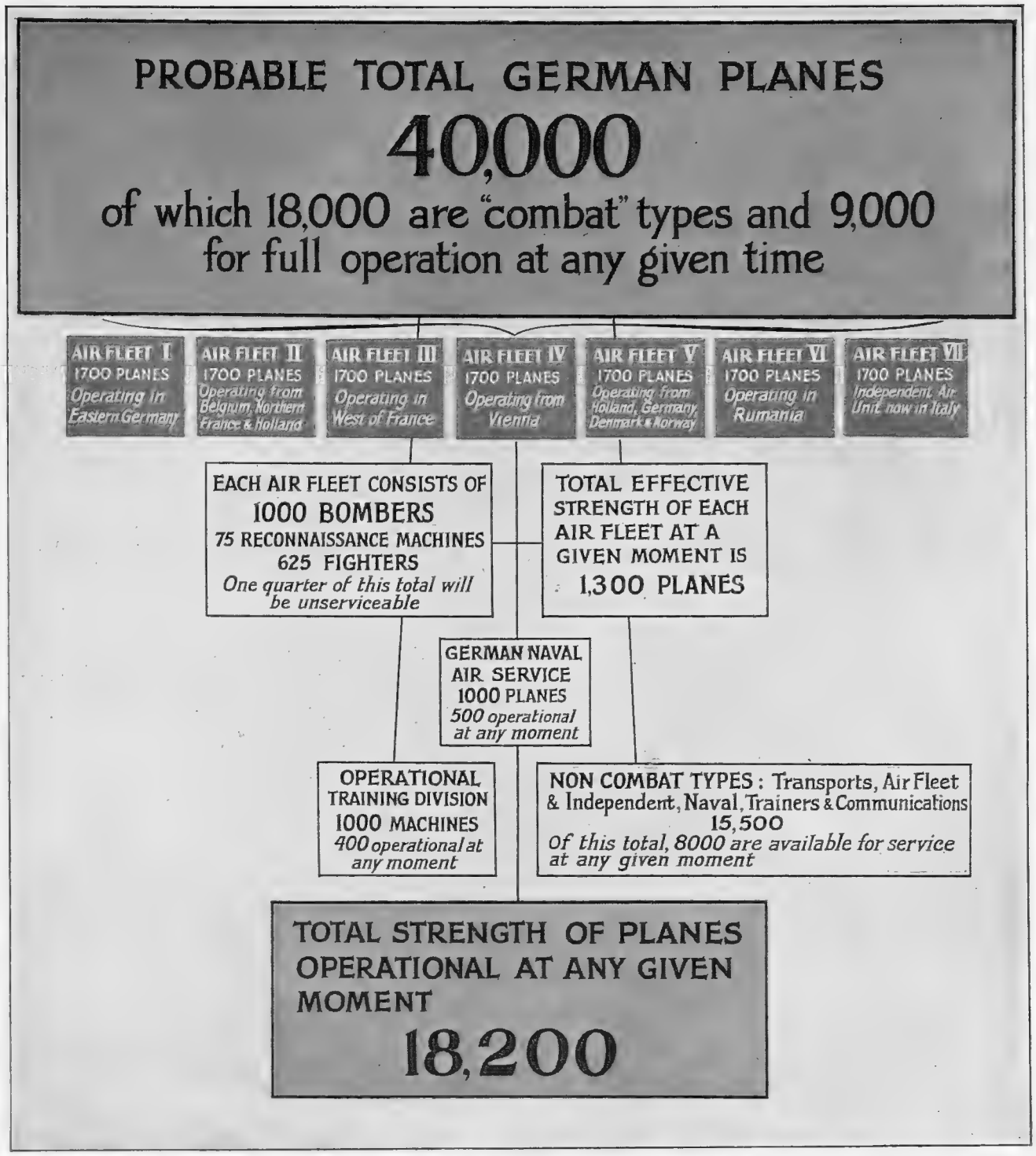
Mr. Masefield puts the operational strength of the German Naval Air Service as 500 aeroplanes, with further 400 machines available for operational training, and at the back of all this about 2,000 assorted transport types designed for the carrying of parachute-troops, air-borne infantry, supplies, anti-aircraft guns, and so forth.

These aircraft, together with a reserve pool of some 50 per cent., as well as 5,000 trainers and "odds and ends," bring up the total to about 40,000 aeroplanes.

A particularly interesting sidelight is thrown on the subject of the German losses during the 17 months of war and the ability of the German Aircraft Industry to replace them. British records show that around 6,000 enemy aeroplanes have been shot down in action with the R.A.F. since the war began. Mr. Masefield believes that in the Polish, Norwegian, Dutch, Belgian, French and British campaigns the *Luftwaffe* has lost not far short of 24,000 aeroplanes, compared with an absolute maximum of 5,500 British aeroplanes.

As the average of German production of "first-line" types during the past 17 months can be set with fair accuracy at 1,400 aeroplanes a month, this means that the enemy has barely replaced his losses and consequently cannot have expanded the *Luftwaffe* since the war began. This is in marked contrast to the R.A.F., which is stronger in every type of machine than it was even a year ago.

One of the most interesting points which arises out of this survey is the wide difference between the operational or "first-line" strength of an Air Force and its absolute total strength.



"FORTY THOUSAND PLANES"—WHAT AN AIR FORCE OF THIS SIZE REALLY MEANS IN TERMS OF FIGHTING—AND OTHER—AIRCRAFT CAPABLE OF BEING USED AT A GIVEN MOMENT—*A special "Sphere" diagram*

The above diagram sets forth some of the main points brought out in the article given here. The author takes the figure of 40,000 as the possible—probable—total number of planes forming the German Air Force. But that does not mean that the 40,000 planes can ascend into the air on a given day. The 40,000 planes are not 40,000 planes of one type, but are split up into at least eight different varieties, all necessary, and it is only certain of these types which are included in the Fighting Fleets which mean trouble to an opposing country and which disturb the imaginations of certain types of people. There are six or possibly seven German fighting fleets containing fighters and bombers, each fleet containing 1,700 planes. These are shown below the main block of 40,000 planes, as forming a part of that main total. But their total of from 9,000 to 11,000 is small compared with the main figure, and these cannot all take the air at a given moment. The boxes immediately below show how the fleet totals are split up and become only 1,300 possible "operational" planes, as the technical term has it. Lower down still, we see that the German Naval Air Arm still further subtracts from the grand total, but the 1,000 planes which the Navy demands is a mere bagatelle compared with the 15,500 planes which such lowly branches as Transport, Training and Communications demand from the German Air Ministry. But neither of these latter figures can be "operational" on a given day. The 15,500 falls to about 8,000 in going order at a given zero moment. So that the grand total of 40,000 comes down to the more understandable figure of 18,200

HOW GERMANY'S SEVEN "AIR FLEETS" ARE DISPOSED THROUGHOUT EUROPE

We know first of all that there are at present three Air Fleets (*Luftflotte*) operating against this country. They are: Air Fleet II, under Kesselring, operating from Belgium, Northern France and part of Holland; Air Fleet III, under Sperrle, operating in the west of France from bases between Brest and the Spanish frontier; and Air Fleet V, under Stumpff, operating from Northern Holland and Germany, from bases up through Denmark and Norway to Petsamo. Besides these, there are also Air Fleet I in Eastern Germany, Air Fleet IV under the Austrian Löhr, with headquarters in Vienna; there is a sixth Air Fleet in Rumania, and an Independent Air Unit now in Italy

The figures quoted show that in general the *Luftwaffe* can be said to be made up in the following manner:—

	Operational.	Total with All Reserves.
Combat Types.		
Bombers	5,400	13,000
Fighters	3,400	8,500
Reconnaissance	500	1,000
Naval	500	1,000
	9,800	23,500
Non-Combat Types.		
Transports, with Air Fleets	2,000	5,000
Transports, Independent	2,000	5,000
Naval	200	500
Operational Trainers	400	1,000
Trainers, Communications, etc.	3,800	5,000
	8,400	16,500
Total	18,200	40,000

This analysis shows in round figures that the machines available for combat at any moment are only 24·5 per cent. of the absolute total; in other words, that the first-line strength is only one quarter of the whole.

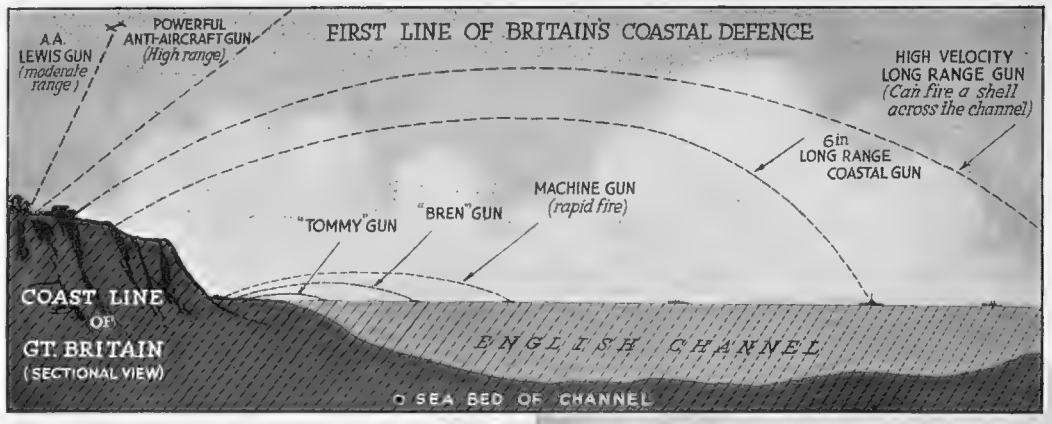
H.M.S. "KING GEORGE V," BRITAIN'S LATEST BATTLESHIP

An Artist's Impression of the Great Warship as She Entered American Waters

—Drawn specially for "The Sphere" by Montague Dawson

The news that H.M.S. *King George V*, one of Britain's new battleships, was actually in full commission and had crossed the Atlantic on a voyage of unusual interest was warmly welcomed at home and throughout the Empire. Doubtless she is at the moment the most powerful warship in the world; she is so palpably strong in offence and defence as to be able to dispense with any vaunting phrase. Though H.M.S. *King George V* is so powerful, her structure is so generally balanced that she avoids the appearance of the hulking or overbearing in any particular section of the ship. In this, her two funnels and her two tripod masts probably materially assist. The most outstanding feature, one which leaps to the eye of those familiar with these giant craft, is the presence of a big four-gunned turret, both fore and aft. Most of us are familiar with the triple turrets of the *Rodney* and the *Nelson*, but here are four long 14-in. barrels directed forward and astern. Above the forward quadruple turret is also a double turret of 14-in. guns so that six great tubes can fire forward and six astern, and

of course at various angles of broadside fire as an action may require. The 14-in. gun was chosen on account of its advantages for salvo-firing, and ten were mounted against the nine 16-in. in the *Nelson*. One quadruple turret, with its thick armour, weighs much less than two double, and is more easily controlled, against which there is the obvious risk of putting so many eggs into one basket. That is a risk which has to be taken, for it would be impossible to get the advantages of concentration and control by any other arrangement. In accordance with the old British tradition, the major power is forward, and in a chase she would bring six 14-in. to bear against three 15-in.—9,360 lb. of shell against about 6,000—while if the chase were 30 deg. or more on either bow, as it might well be, all ten guns would bear and the weight of metal would be no less than 15,600 lb. The colossal weight of the two forward turrets makes it necessary to set them well back, otherwise the ship would plunge badly in a head sea and would inevitably lose her speed. Another impressive feature is the huge bridge and control structure. In general outline it is reminiscent of H.M.S. *Warspite*, a big tower with an overhanging superstructure, but with the two funnels of *King George V* against the one of the *Warspite* the resemblance ceases. On her starboard side the new ship carries two anchors, against one on the port side. The projection running round and, as it were, enclosing the two anchors is part of the de-Gaussing equipment, which checkmates the enemy's magnetic mines. The ship carries heavy armour, but it is not very noticeable from this point of view; nor does she show any signs of the big blisters which torpedo activity once necessitated. Both masts are of fairly massive tripod form. Between them, in Mr. Dawson's picture, can be seen the groups of smaller guns—anti-torpedo guns of medium calibre—6-ins. or the new 5·2-ins.—arranged in turrets after the fashion of the *Nelson*, but instead of three turrets on either side, arranged in a pyramid, there are four, so that an enemy approaching from the broadside would be met by the concentrated fire of eight of these guns, and from dead ahead or dead astern by four



HOW BRITISH GUNS COVER THE SEAWARD APPROACHES : This is the arrangement of fire-power which will greet the enemy when they decide to invade this island ; and the guns indicated here line the whole length of the British coast. First, the heavies ; then, the mediums ; right down to the Tommy-gun and Bren gun on the actual shores. Truly a formidable prospect for the invader from the sea !

THE GUNS THAT PROTECT OUR SHORES TO-DAY

How the Coastal Protection of Britain has been Organised

Described by DONALD COWIE

ARTILLERY for coastal protection, as developed under high pressure in this country to meet the threat of invasion, is divided roughly into two classes. There are the big guns which *cover the sea*, and the smaller weapons which *cover the foreshore*. The first range from mammoth batteries on permanent emplacements to light mobile guns ; the others include a variety of pieces from the latest anti-tank ordnance to automatic small-arms, many of them hastily improvised for the purpose in the true British manner. It is doubtful, indeed, whether any coastline has ever accommodated such a formidable array of deadly ordnance.

Twelve months ago the position was very different. Strong coastal protection was then confined to a comparatively few "defended ports," in the official phrase. The Royal Artillery had a special branch whose duty was to erect and maintain batteries on permanent emplacements at these vital localities. Their purpose was the defence of naval bases, dockyards, and natural harbours or anchorages. Probably most people have, at one time or another, caught a glimpse of the mysterious, swathed barrels, the iron doors leading to unmentionable magazines. But nobody ever thought that a time might come when these conventional defences might actually be stripped for *action*.

Yes, it must be admitted that, until the fall of France, our coast batteries were there "just in case" a tip-and-run raider had the incredible effrontery to attempt a quick bombardment of an important harbour. But the situation changed completely with the Nazi occupation of overlooking shores. There is no need to talk any more about the bristling beaches of Britain. But the intelligent layman will like to know a little more about the actual technique of the new ordnance that has been so efficiently deployed in recent months.

That distinction between sea-covering and shore-covering batteries has first been made plain. Let us take a look at one of the most ubiquitous fixed guns of the modern big variety. This is the 9·2-in., a massive weapon on its revolving platform, total weight of 28 tons, with its sea-jutting barrel 37 ft. long. But modern machinery makes the gun so easy to handle that—according to unofficial estimates—a series of rounds weighing 380 lb. each can be fired about 14 miles into a circle 12 yards in diameter, and traversing, elevating and loading operations can be performed in a matter of seconds. Hydraulic gear is the secret of this useful slickness. In a pit under the breech is a hydraulic hoist, a recuperating buffer, and the revolving mechanism. On the left of the gun outside, however, is an emergency derrick for raising the heavy shells from the pit if the hydraulic gear is put out of action.

Around hundreds of such guns on beach, cliff, jetty—and they include all types : medium 6-in. batteries, and smaller 12-pounders much in prominence—live in readiness, day and night, thousands of trained men. They are under an officer known as the fire commander in the first place. He controls several batteries and chooses the targets to be engaged. Next come the battery commanders, who must, however, be prepared to act on their

THE EMPLACEMENT OF A COAST-DEFENCE GUN IS VERY IMPORTANT : This picture shows a very ideal situation, where the gun has an effective command of a wide stretch of coast. Beneath the concrete platform is the shell-lifting machinery and magazine

THE LAYERS STAND AT THE SIGHTS OF ONE OF OUR GUNS : Note the massive armour-plating of the shield ; then look at the instruments, electrically-wired, with guard removed. Some of these guns have ordinary telescopic sights, others new ones of the cone type

ON A SCOTTISH ISLAND : These Territorial gunners are loading a twelve-pounder fixed coast-defence gun. This is an adaptable, quick-firing weapon which would be equally effective against ships, submarines, landing parties, or even small tanks

MR. WINSTON CHURCHILL INSPECTS ONE OF OUR COASTAL BATTERIES : He evidently appreciates the business-like thrust of this medium gun as it stands ready to defend a stretch of open coast in the north-east of England. The weapon resides under an improvised shelter

THE NORTHERN COMMAND SPECIALISES IN HEAVY GUNS OF THIS KIND : They can be quickly cleared for action to engage vessels far out at sea. The guns, as will be noted, are swung round at right angles to the mounting. The tubes under the barrels are recuperators. The hand-wheels are for traversing and elevating, and the sights are above them

ONCE A FAVOURITE WEAPON OF AMERICAN GANGSTERS, the Tommy-gun to-day awaits possible landing-parties on our exposed, but not unprotected, beaches. Stumbling ashore from barges, E-boats or submarines, Hitler's unfortunate minions would be greeted by a devastating fire from these deadly short-range weapons

A 6-IN. GUN OF AN OLDER TYPE, temporarily mounted under very efficient camouflage-netting on the East Coast of Scotland : it is mobile, and can be moved to any danger area in a short time. Note the heavy block and tackle to prevent the weapon from moving back on the recoil. The latest guns of this type have pneumatic tyres on the wheels ; but the old, steel-shod variety can be very useful on muddy occasions

own initiative ; and then the section commanders, who look after the light guns, which may have to deal with small and quick-moving targets.

Personnel is always divided into three shifts, one of which is ready to operate the guns at a moment's notice, while another remains full-dressed at close call, and the third does its best to get some sleep. Night is the important time. During the day the crews can " relax " sufficiently to clean the guns—spray and sand often make this a heartbreaking job—and to undergo constant training in such matters as telephony and the issue of orders, not to mention range-taking, laying, loading, and routine drill.

Then there are vital subsidiary services to a coastal battery which the layman may not understand. Each battery has its searchlights, divided into two kinds, those with a concentrated beam for maximum range, and those with a dispersed beam for turning night into day. There are the range-finders, sometimes very complex. Certain fixed guns have the help of a ruled glass screen, exactly dividing the covered stretch of sea into mathematical sections, so that the gunner can work with great precision. This is one of the advantages of the shore battery over the alien ship. It knows its stretch of sea by heart, and can aim almost as accurately as if on a shooting-range.

Just in case Hitler does decide to ferry some of his soldiers over in miniature tanks, there are 2-pounder anti-tank guns, with wheels quickly dismantled and tripods spread upon the half-dry sand ; there are the slim, long-barrelled anti-tank rifles, held lengthwise among the dunes, the bushes, or behind the breakwater by impatient young men.

Here will be a detachment armed with the vicious Besa machine-gun, latest type to be adopted by the British Army, firing 3,000 rounds of ·312 or ·501 in 30 mins. without change of barrel, or 7,000 rounds in the same time with two barrels. Further along you will encounter a group of steel-helmeted warriors crouched behind fantastic barbed-wire—see the photograph—with those ugly little Tommy-guns, particularly useful if any misguided Huns did attempt to land from E-boats or submarines. They fire 1,500 rounds a minute, a nasty stomach-full close up, but not so accurate from a distance. And, of course, there are Bren guns everywhere.

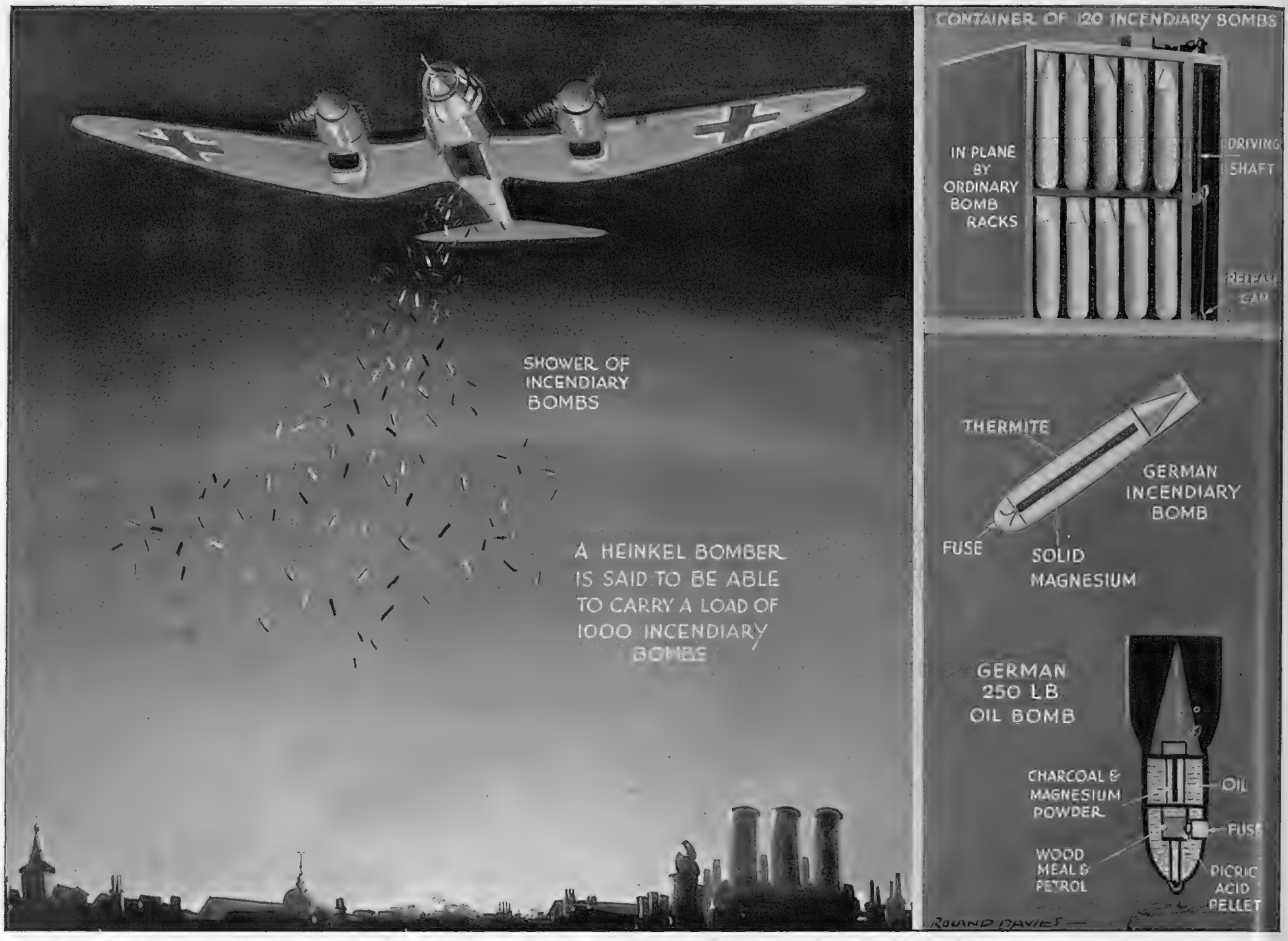
Bren guns point gawkily at the sky and sea along many miles of our coasts to-day. They are aided and abetted everywhere by concrete, in the form of pill-boxes, block-houses, fortifications, even, in some cases, watch-towers in the sea itself, where tiny garrisons maintain ugly vigils with only the weight of their armament to console them.

And in other places the defence is very nicely rounded-off by nothing less than dozens of excellent cannon and machine-guns from German aircraft that have been taught their lesson nearby. Every time more ammunition is needed, they say, somebody goes out and brings down another plane-load !

UNCEASING VIGILANCE FOR TWENTY-FOUR HOURS EACH DAY : Our gunners need no longer worry about their guns, ammunition and training. All their faculties are concentrated now on the enemy. When will he come ? Will it be across the stretch of seas opposite *their* big batteries ? Here is an observer with his field-glasses hopefully scanning the horizon in front of a typical giant gun on the coast of Scotland

A GUN-LAYER USES THE INSTRUMENTS OF A 9·2-IN. GUN ON THE SOUTH-EAST COAST : Traversing and elevating wheels are in front of him, also a speaking-tube for instructions. The whole outfit is nicely concealed under its camouflage netting

THE MASSIVE, BUT DELICATE, BREECH OF A 6-IN. GUN IS OPENED FOR THE SHELL : The mechanism of the breech actually makes these guns possible. Without the intricate devices incorporated therein, breech-loading would be difficult and firing very dangerous



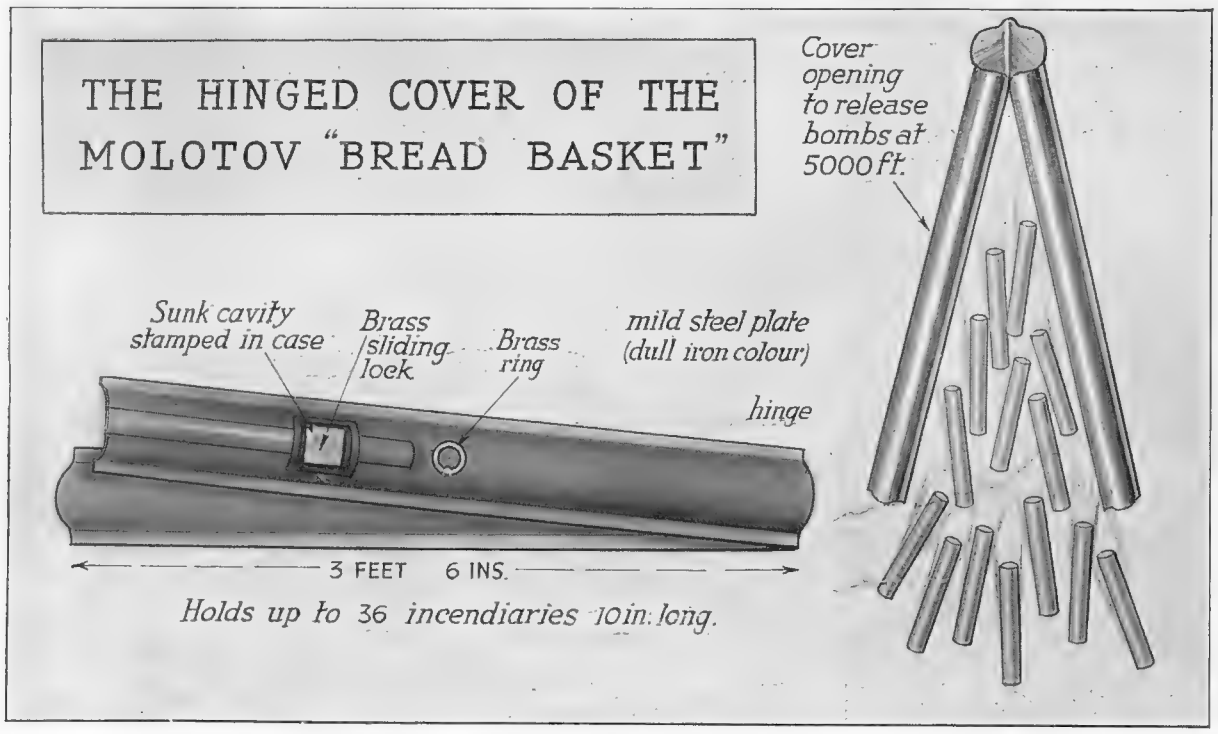
HOW THE INCENDIARIES ARE STORED IN A BOMBER, THEIR COMPOSITION, AND THE MANNER IN WHICH THEY ARE SCATTERED FROM THE RAIDER—*Drawing by Roland Davies*

The Heinkel 111K used originally for bombing with high explosives now appears to be employed for fire-raising purposes by means of incendiaries. This aircraft can carry a load of 1,000 of these small bombs, as each of them weighs only a little more than 2 lb. The incendiaries are packed in containers—side by side, as indicated in the upper right of the above drawing. Some 400 of these can be released at a time! The inset in the bottom right shows the composition of one type of bomb used over this country; and also shows the composition of the "oil bomb" which has also been used for fire-raising purposes—this sprays a shower of highly inflammable material over a wide area when it bursts, and weighs nearly 250 lb. The larger drawing shows how the Heinkel bomber opens up its bomb panels in the underside of the fuselage for the release of a shower of its deadly cargo

SPECIAL "SPHERE" SECTION

FIRE-RAISING and FIRE-FIGHTING

The Incendiary Bomb—How it is Made, How it is Dropped from the Bomber, and the Best Methods of Dealing With It



THE METAL CASING OF A "MOLOTOV BREAD-BASKET"

The method employed by the enemy in releasing a number of incendiary bombs in an external metal casing is illustrated above. It is popularly known as the "Molotov Bread-basket." Two pieces of moulded metal, hinged at the top, contain a varying number of incendiary bombs. At a given point on the downward path of the container, it spreads open and the bombs, released like peas from a pod, shoot out and continue to descend separately. Each bomb has a finned tail to guide it—a necessary addition, for the incendiary bomb only weighs some 2 lb. and is not very heavy in the head. On the outer case there is a kind of metal catch which evidently forms part of the release mechanism. The case, of course, falls to earth after the discharge of its contents

TO most of those upon whom will be conferred the privilege of guarding our Capital from the fire-raids of the enemy "an incendiary bomb" is but a name, and fire a rather jolly thing at the end of the garden; hence, if fire watchers are to function to the common good, some specialised knowledge to fit them for the new, high calling is necessary.

The usual type of fire bomb in use at present is the "Kilo" electron bomb. It is about 9 inches long and 2 inches in diameter, of a greyish, silvery colour and provided with a tail of sheet iron something like the "flights" of a dart. This silvery material is an alloy containing 90 per cent. magnesium, 5 per cent. zinc and 5 per cent. aluminium; therefore when raised to the critical temperature it burns with the intense bluish-white glare of a photographer's flash-light powder. The temperature generated by the burning electron is 2,732 deg. Fah., a figure which means but little until we reflect that water boils at 212 deg. Fah.; however, this is by no means the worst part of the bomb. The contents consist largely of thermite, a mixture of finely powdered aluminium and iron-oxide. This burns at a temperature of 3,750 deg. Fah. and, because the iron-oxide gives up its oxygen, which is absorbed by the aluminium, it cannot be extinguished by any known method.

The bombs are actuated by means of a striker which pierces a capsule of bi-oxide of barium. This sets fire to a magnesium fuse which, in turn, ignites the electron and starts the thermite working. The thermite provides its own oxygen, but the magnesium fuse requires air in which to burn, hence round the bottom of the bomb, opposite the fuse, a series of holes are drilled some ¼ in. in diameter through which the air is drawn inward. The electron casing takes up its oxygen from the surrounding atmosphere.

Now the general instructions, which are quite sound, are "cover the bomb with sand or dry earth, pick it up on a long-handled shovel and throw it out"; but any cook will tell you that to take a boiling

saucepan from the kitchen range is a very hot job, requiring not a little skill; and it will be disastrous to approach incendiary bombs as though they were simply sitting on the ground waiting to be sanded and shovelled.

Let us imagine business premises consisting of a yard; front building used as offices and showroom, modern, having a flat, concrete roof covered with asphalt; back premises used as workshop and stores, old, having a sloping, slate-covered roof; and, across the yard, a garage holding four motor lorries and having stored in an underground tank 500 gallons of petrol. Two fire watchers are on duty, a raid is in progress, that annoying mosquito hums overhead, the sky is lurid with fires in other districts, when the short, sharp blasts on wardens' whistles call every muscle and nerve up for duty. In less than one minute four incendiary bombs have landed on our building! One glares and splutters white and ghostlike in the yard—another is chuckling away on the flat roof of the office building, the third has dashed through the slates

THE DEADLY "BREAD-BASKET" ORIGINALLY DEVISED BY THE RUSSIANS FOR THEIR WAR IN FINLAND—*Drawing by Roland Davies*

The main point about this type of "bread-basket" is that it does not open and release its shower of fire-raising missiles until some seconds after its release from the bomber. As it nears the ground, and after the propeller has made a given number of revolutions, the bottom portion comes away and spills the incendiaries: the top half, however, consists of a complete high-explosive bomb which explodes on detonation with the ground! Thus we have incendiaries and H.E. bomb in one and the same container

THE ACTUAL DROPPING OF A LARGE BOMB FROM A GERMAN PLANE, AS WITNESSED RECENTLY IN DAYLIGHT BY A "SPHERE" ARTIST: Our artist was at a window in the Eastern counties when the plane came into view flying low and emerging from a cloud. Suddenly an object was seen to fall from the plane—apparently very slowly. It disappeared behind some buildings in the middle distance

of the workshop and from that direction already there comes an ominous crackling sound, and the white gleam is incarnadined with fire started. The fourth bomb dropped on the garage but seems to have gone out—has it?

Our two fire watchers now have their hands very full. They must not lose their heads and go rushing helter skelter about the premises. A minute (which is under these circumstances a mercifully long span) spent in cool consultation will not be time lost. The two men must not separate one from the other, and have to decide therefore which of the four bombs to tackle first. In the yard that chalky glare is lighting up the world around and apparently making a good target for the high explosives. Is the bomb on the office roof through yet? What of the petrol in the garage?—but there in the stores, fire is already ravening among wood and straw. Obviously it is to the stores we must go.

Immediately on entering, one's eyes are stabbed with needle-sharp fumes, one's nose and throat assailed by breath-taking smoke and hot air. Strangely enough, the fire itself is invisible, wrapped about as it is in a blanket of self-created fog—pink, opaque, deceptive, and to advance through this haze is to court disaster by falling over a thousand obstructions. The remedy is, DOWN, snake-like on the floor, where the air is fresh, and the legs of the furniture can be clearly seen. Creep forward to the fire. The bucket of water and the stirrup pump are near at hand. Use the spray to cool the air in the vicinity, but on no account use the jet, for to do so may result in striking the bomb which will then explode. Find the bomb. There it is! between a couple of packing cases, both of which are burning. Rake it out, and use the long-handled shovel to pick it up. Drop it in a bucket with about 6 inches of sand on the bottom and immediately dump more sand on top. This is effective "first aid," but do not attempt to hold the bucket by the handle, that will be far too hot; a stick, or the shovel itself, must be employed.

Now the resultant fire remains to be extinguished; for this purpose the jet of the stirrup pump must come into action. It should be directed at the base of the flames so as to destroy them at their root. As soon as the bulk of fire is out, a cloud of steam will be added to the smoke pall present; but at this juncture (the fire being now "under control") windows and doors may be thrown open. A final "slash round" (as a fireman calls it) with the stirrup pump will enable our fire watchers to leave this job.

The garage is next in importance. There is the bomb down between two lorries, a most awkward place to get at and not too far from the tyres. The oily coating of the concrete floor is already smouldering, and again smoke and fumes fill the place. The same technique must be employed—down. Crawl in, and dump a part-filled sandbag on this bomb, for it is doing but little harm and may safely be smothered where it lies. Had the garage floor been of wood, however, the bomb would have had to be removed.

Bomb Number Three, which is on the roof of the office building, must now be tackled, and what we have to take into consideration is that it has been burning for several minutes, therefore the thermite is alight and the heat will be intense. To protect oneself under these circumstances a shield should be used. In the absence of something better, a dustbin lid held before the face will give adequate protection.

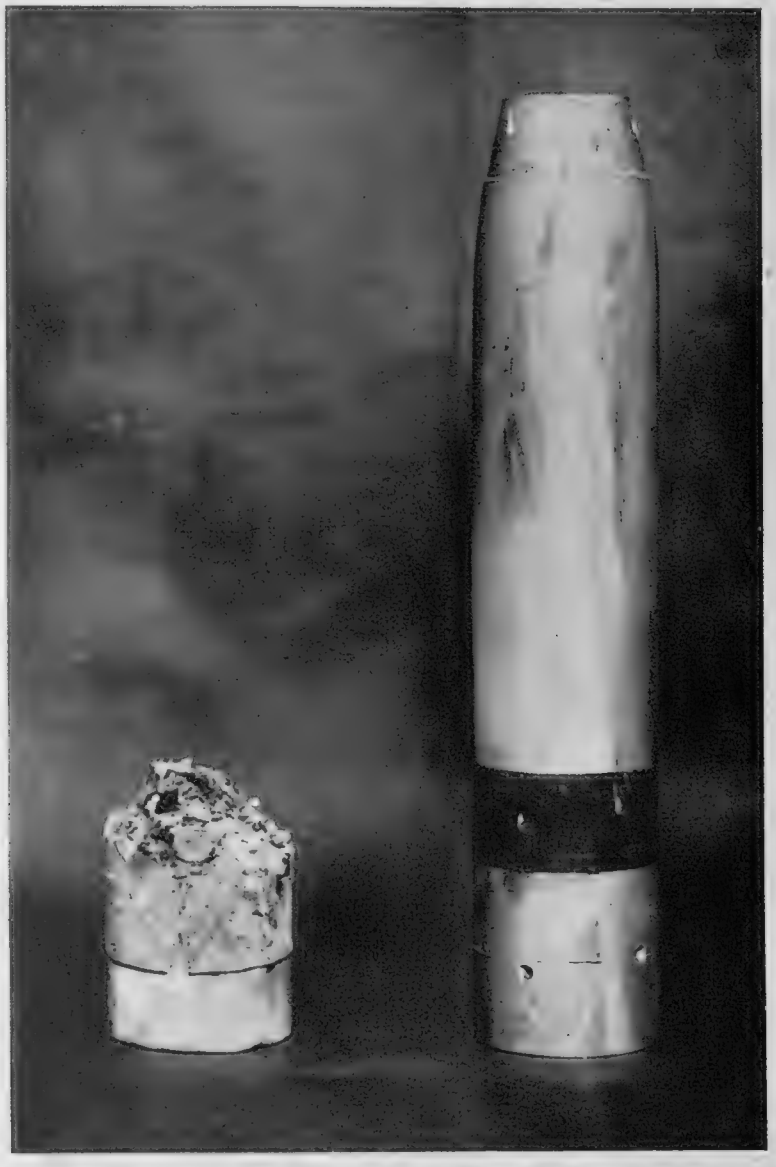
Out here, on the roof, there is nothing in the nature of confined smoke to blind and choke the fire watchers, so the bomb may be easily sand-smothered and shovelled up; but, of course, it will not be wise to attempt to put it in a bucket and carry it down through the building. With plenty of sand both under and over it, the bomb had best burn itself out; but if it must be removed, then, after shouting "Stand from under!" it may be dropped over the edge of the roof, care being taken that it doesn't fall into a basement, or a petrol store, or even a boiler house where coal and coke are stacked. The asphalt roof covering will burn, but can be temporarily smothered by sand.

Bomb Number Four, which, in the yard, is still lighting the scene, may now be covered and the Fire Service called in. It will probably be found that the fire in the stores is by no means out, but our fire watchers have done their job—wetted the surrounding material, extinguished the bulk of the flames and so slowed the course of the fire down.

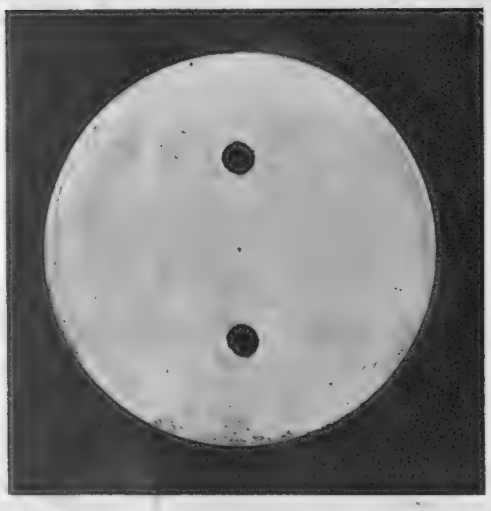
All this good work had been done in the first seven or ten minutes, yet at least two of the four bombs are still burning, because the "Kilo" bomb works for fifteen to twenty minutes and can only be extinguished with sand if the charge of thermite is not yet started; therefore, now having something approaching "leisure" in which to do it, the bomb in the garage should be removed by the fire watchers, for the drops of molten iron from the thermite may find a way through to the petrol storage tank, in which case the stirrup pump makes its exit and a "foam" extinguisher comes to the fore.

Fire watchers should always bear in mind, when on a roof, that what appears like a large flat slate may be (and probably is) merely a very grubby glass skylight, and that corrugated iron sometimes consists largely of rust bonded in many coats of tar—adequate protection against the weather, but not a strong ground to stand upon. Boards laid upon such structures give a sure enough footing.

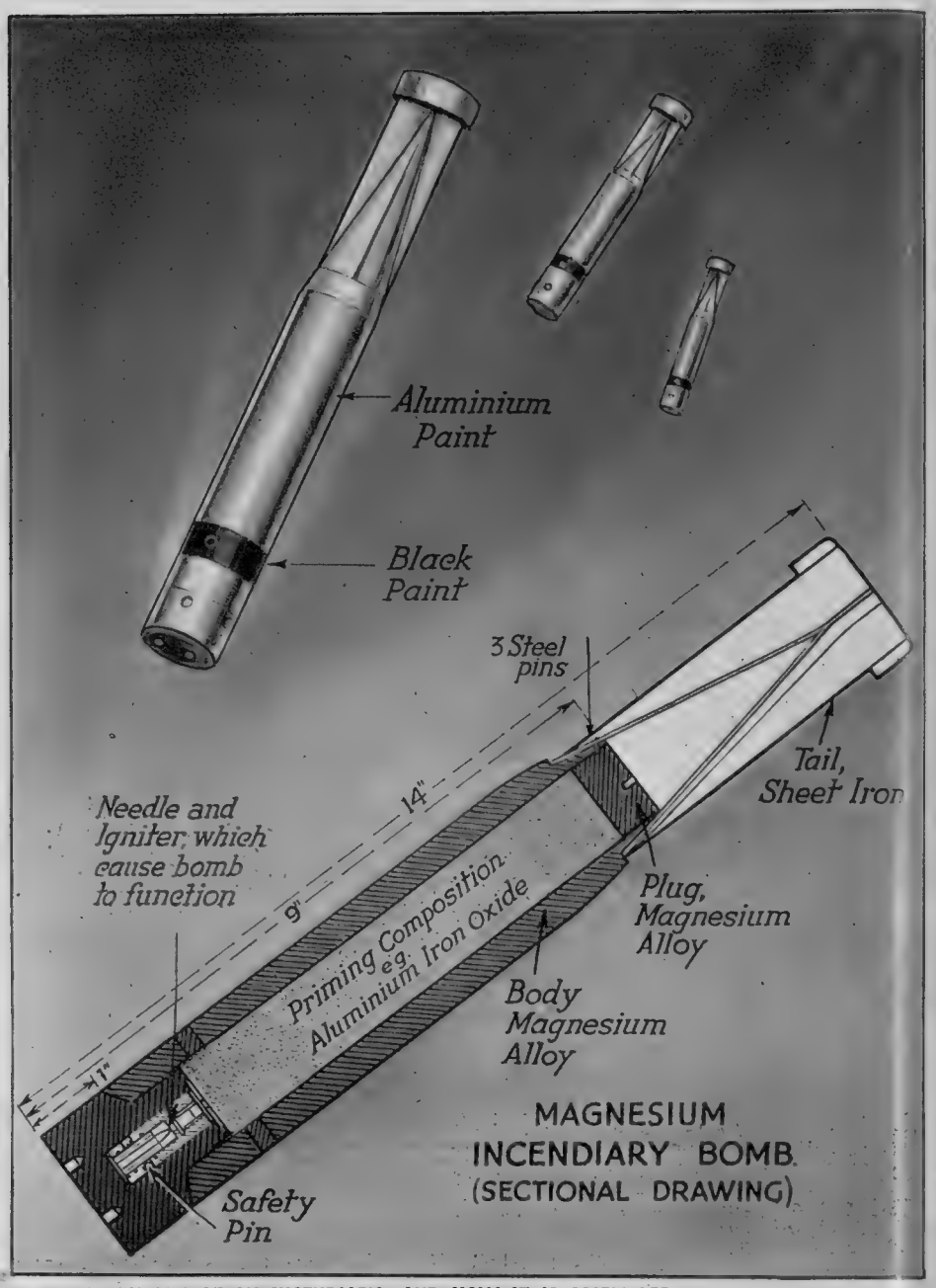
Every fire watcher should be provided with a good axe, the head very firmly secured to the handle; a good torch complete with a neck cord or strap so that it cannot be dropped or lost, and last, but by no means least, a length of very stout cord—not less than twelve feet. This should be made up in a "blood-knot" and kept either on the belt or in the pocket. It has a thousand uses. One might lower an incendiary bomb in a bucket down from floor to floor by its aid—or, should the ladder slip, lower oneself.



A GERMAN INCENDIARY BOMB PICKED UP WITHOUT FINS AND UNCONSUMED: On the left is also shown the forward end of a consumed incendiary bomb. The bomb on the right is aluminium in colour, with a black band painted near the forward end; several small holes also appear near this end



THE BASE OF A GERMAN INCENDIARY BOMB, SHOWING TWO HOLES ADMITTING TO ITS INTERIOR



THE COMPOSITION OF AN INCENDIARY—AND HOW IT IS ASSEMBLED: The type of bomb shown here consists of a thick-walled tube 9 in. long and 2 in. in diameter, made of an alloy of magnesium with a small proportion of aluminium. On one end of this tube there is a metal tail 5 in. long to steady the bomb in flight. The tube is filled with a priming composition of the thermite type. The bomb is fitted with an igniter which may be situated either in the nose or in the rear end of the tube. The bomb weighs about 2 lb. 2 oz. and, with the exception of a few ounces in the tail and igniter, there is no dead weight, the *whole* being incendiary material. The bomb functions on impact

INCENDIARIES—What They Are, and How They Fall

INCENDIARY BOMBS, or, as Mr. Morrison prefers to call them, "fire-bombs," are becoming a matter of personal interest to most people nowadays. Fire parties are working so well that, before long, the enemy may give up using them on a large scale and resort to a greater proportion of high-explosive bombs.

Heinkel He 111K two-motor heavy bombers appear to be the chief types used on incendiary raids at present, leaving the newer and faster Junkers Ju 88s to bring the H.E.s afterwards. The incendiaries are carried both in containers fitted in the normal vertical bomb-racks, and also in smaller racks in the after part of the aeroplane, where they can be dropped out by the rear gunner.

In the containers in the normal bomb-racks something like fifty containers of incendiaries can be carried at a time and some 400 incendiaries released at once. Even so, such a load is well within the capacity of a He 111K, for each incendiary weighs only one kilogram (2·205 lb.), and a Heinkel can carry up to 2,000 kilograms (two tons) of bombs.

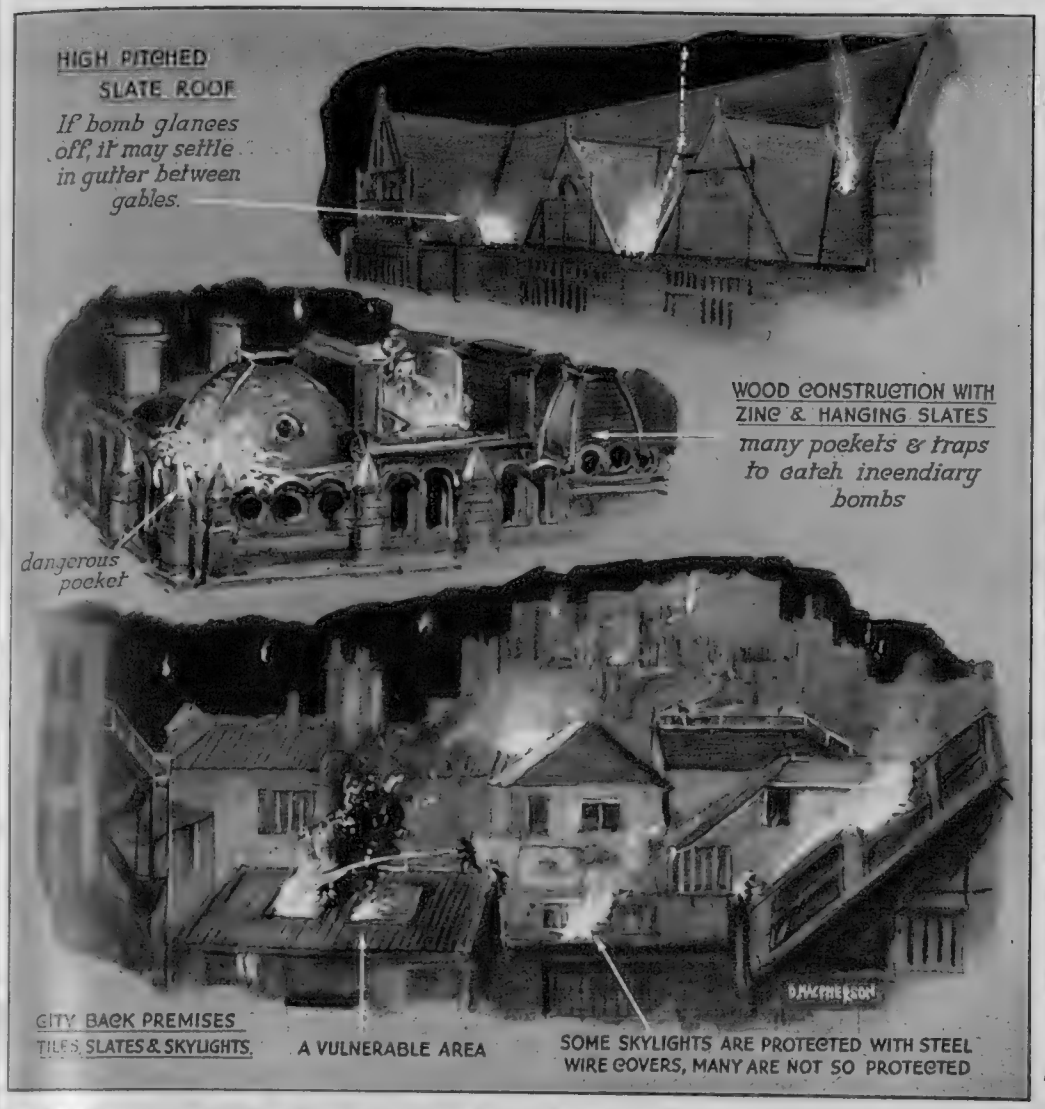
Incendiary bombs are poorly streamlined, with a square nose and roughly faired tail. Thus they fall in an erratic manner and cannot be aimed with real precision. For that reason they are scattered broadcast over any likely target, in the hopes that a small proportion will fall where they can start a dangerous fire. German bombers flying over British cities appear to release their bombs from about 18,000 ft. as a rule, further proof of the complete lack of aim. With even less pretence at precision bombing, the rear gunners of the Heinkel frequently drop racks of incendiaries by hand through the under-gun position, where a trap-door serves as an entrance for the crew.

Dropped from a height of more than 10,000 ft., the incendiaries are liable to fan out just as the shots from a sporting gun scatter. They fall comparatively slowly—probably at little more than 200 m.p.h., because of their poor streamline—and thus are affected to some extent by any violent air disturbance through which they pass. For this reason, too, the aeroplane from which they are dropped is usually some distance ahead of the point at which they hit the ground.

The chief value of incendiary bombs is not so much the damage they are likely to do themselves, but rather in the manner in which they can light up a target near which they fall for the benefit of the following bombers with more lethal loads. The value of "fire-bomb fighters" is obvious.

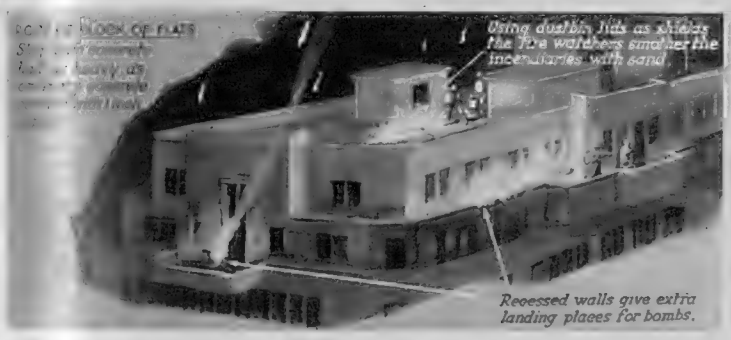
On right above—When the incendiary ignites, it first indulges in a violent spluttering which lasts from 15 seconds to one minute; flaming sparks and clots are scattered in all directions. *Below on right*—Ten minutes after ignition, if left to itself, the bomb becomes a pool of molten magnesium which will burn through floor-boards and pour down to another room

FIGHTING THE FIRE-BOMB



VULNERABLE SPOTS WHERE BOMBS MAY FALL ON CITY ROOFS : Incendiary bombs falling on the latest form of flat roof now largely employed in recent building will not likely penetrate through the slag-foam concrete with thick, fire-resisting tiles embedded, but might, after sprinkling with sand, be left to burn themselves out, provided they were not likely to destroy cables, etc. The same might be said of the concrete and asphalt type of roof. The vulnerable types of roof are those with high-pitched slate formation. Roofs with cupolas built of wood and covered with zinc and slates also provide a difficult task for the fire-fighter

A GOOD USE HAS BEEN FOUND FOR THE SANDBAG : When it was found that promptitude of attention was one of the chief means of defeating the incendiary bomb, thousands of sandbags were distributed over municipal areas, so that instant application of sand could be made on an incendiary which happened to fall in a street or area. The type of bomb which the enemy has been dropping on London has been dealt with effectively in many cases by the use of these bags of sand. The enemy is fertile in nasty invention, but every "improvement" he thinks of will be met by appropriate action, so alive is the Government



PROBLEMS OF A MODERN RECESSED-ROOF BUILDING : The modern architect's devices have not all proved beneficial from the incendiary-bomb point of view; his recessed roofs prove most convenient landing-places for incendiaries, and fire-watchers have to be very alert in tackling several at once. The slag-foam concrete employed as a roofing material has proved a virtue

ROOF REPAIR ON DAMAGED HOUSES NOW IN PROGRESS : The repairs to roofs of houses will prove a valuable guard against the penetration of incendiaries, especially on domestic properties. In many cases tiles and slates are dislodged, but the houses are otherwise habitable. If left with rafters gazing at the sky, the incendiary bomb would drop into an upper room

FIGHTING A VARIETY OF FIRES WITH SAND AND STIRRUP-PUMP : Here the artist shows a variety of roof problems which may at any moment confront a party of fire-watchers. The two at the top of the diagram are attacking bombs with sand; the downward action of these bombs is checkmated by the slag-foam roofing material. The next group of three in this case are attacking a fire with the stirrup-pump—the third man is a replenisher. He will be indispensable if the three bombs are to be promptly and efficiently dealt with. In the foreground the danger from the unprotected skylight is indicated, as also the penetration of a bomb right into an upper attic room

FIGHTING THE FIRE-BOMB

AFTER A DAYLIGHT FIRE-RAISING RAID ON LONDON : Policemen, A.R.P. workers, neighbours and passers-by help to remove furniture from a block of flats threatened by fire after the dropping of incendiary bombs. In every big town to-day the citizens are becoming increasingly conscious of the need for prompt action when incendiaries are unloosed upon them. When dealt with promptly, the consequent damage can be greatly minimised

A MODEL FIRE-WATCHING SERVICE IN HORNSEY : Two watchers are on four-hour shifts in this road. Another six men on the fire-fighting rota hang out white cards on their gates to indicate that they are ready to help fight fires when the watchers blow their whistles

COPING WITH INCENDIARIES : Having first covered the bomb with sand, it is then shovelled into a pail, also full of sand, and removed from the premises to burn itself out harmlessly

LANTERN-SLIDE LECTURES TO TEACH MANCHESTER HOW TO DEAL WITH FIRE-BOMBS : The police in Manchester have organised a series of lectures, illustrated by lantern slides, on the handling of fire-bombs for volunteer fire-spotting and fire-fighting parties. The first lecture was given in the city's Regal Cinema and was attended by 300 people—mainly warehouse and factory employees. A policeman is seen here, using a pointer to explain certain aspects of the lantern-slide projection of a burning building

THIS IS WHAT HAPPENS WHEN WATER IS POURED ON A FIRE-BOMB : It blazes more fiercely and scatters sparks right and left. But it consumes itself more quickly too and is soon harmless

BOMB-BLAST and its VAGARIES

Some Examples of the Effects of High-Explosive Bombs on Different Types of London Buildings

In Presenting the Series of Pictures Reproduced on the Opposite Page, the Editor would Like to Point Out that these have been Selected to Show Different Kinds of Damage Wrought by High-Explosive Bombs on Different Kinds of Building in the London Area. A Study of these will Provide Some Illuminating Contrasts; and also Indicate How Some Types of Building will Stand up to the Explosive Effects of Bombs Better than Others

BEFORE one can consider the effect of the high-explosive bomb on buildings, it is necessary to have some idea of the nature of the bomb itself, how it works, and what happens when it hits a building.

These bombs are dropped from aeroplanes at varying heights, and the minute they are released they are acted upon by several factors which all contribute to the effect they produce. First of all, the speed of the plane carries them under the plane for some distance, until the forces of gravity, loss of speed, and atmosphere all exert an influence on the flight of the bomb, which finally descends to earth in the form of a curve. The higher the plane is above the earth, the steeper will be the path of the bomb at the moment of impact with a building. Should the plane be flying at 5,000 feet or less, the bomb will drop at a considerable angle with the perpendicular and may enter a house well below the roof, which has often happened.

High-explosive bombs are of two types, the instantaneous and the delayed-action bombs. The instantaneous bomb explodes on impact, which drives a needle into an exciting charge which explodes the main charge, usually Amatol or T.N.T. The delayed-action bomb is fitted with a device which causes the explosion some time after hitting the building. The effects of the explosion are two-fold. The explosion generates great heat as well as blast. The blast forces walls away from the point of explosion and tends to buckle the floors of houses. The heat creates a vacuum, which is filled by cold air rushing in. This pulls the walls outwards away from the floors already damaged by the blast. The result is that walls are nearly pulled out into the street, not by the force of the explosion, but by the rush of air filling the vacuum caused by the generation of intense heat of the explosion itself.

The vagaries of the blast are so numerous that it is impossible to lay down hard and fast rules as to what will occur, but the above is the general procedure. No one can account for the way in which some houses and windows are destroyed and others spared, nor can we reckon with the reflection of blast from walls, which will devastate houses far down on the opposite side of the street, leaving houses close at hand untouched.

If caught in the open, the only chance is to lie down, against a wall, or even in the gutter, which will afford a certain amount of protection.

The damage so far caused in London affords a striking contrast between the powers of resistance of the various types of buildings. Whereas the older type of brick-built house with solidly constructed walls suffers only in the story actually struck, which is as a rule completely demolished, the modern steel and concrete building stands erect, though its brick walls in between the girders may often be pulled out. Even though the main supports may collapse, the steel framework still remains, almost appearing to be resting on air. The old-fashioned cheap, one-storied houses collapse like a pack of cards. The explosion of a bomb in the street outside a modern building seems to have but little effect beyond smashing the windows, but the brick walls of older buildings will be pulled out into the street. Very rarely do we find that a house will collapse on itself: this, however, has occurred on a few occasions.

An extraordinary effect caused by a bomb which struck the outer wall of a big block of flats, leaving the inner and adjoining walls practically intact. The immense strength of the lofty building withstood the shattering effect of the explosion to a marked degree

The effect of a high-explosive bomb on a well-known building in Leicester Square. This bay-front building is a modern erection, with a steel frame; it still stands, though the windows are blown out. The older building on the left has vanished

Here the blast seems to have spread downwards, leaving the complicated timber framework of the adjoining house almost intact. The main frame of the building will thus be capable of comparatively speedy repair when the time comes

A high-explosive bomb has evidently passed through the top story of this brick tower, tearing away the brickwork but leaving the tower itself standing. The steel girders are plainly visible supporting the upper story, which now hangs in the air

A large block of residential flats was hit by a bomb which exploded on the fifth floor. The effect of the explosion can be seen in the twisted girders, but the steel frame saved the building from collapse. Several residents on the upper floor were uninjured

The striking powers of resistance of the modern reinforced concrete building: despite the shattering explosion, the buildings to left and right have suffered only the smashing of windows and door-frames, which were blown into the street

An up-to-date shop in a fashionable shopping neighbourhood: although the front of the building has entirely disappeared, the powerful steel girders bind the frame together and prevent collapse. This building suffered severely from fire

The brick-built house seen here evidently suffered from a bomb which struck the wall at about the first-floor level. The upper floor, though battered, still remains. The people in the upper rooms were, surprisingly enough, not seriously injured

A small, two-storied old-fashioned house has been struck by a H.E. bomb, but only the roof and the upper story appear to have been damaged. The bomb must have exploded on impact without penetrating. Some of the windows have not even been broken

The clean, incisive manner in which a bomb will cut its way through a row of houses: while totally demolishing the house actually struck, it often leaves the adjoining houses more or less intact. Here the lateral blast has blown out the party wall

A NEW AMERICAN FIGHTER FOR THE FLEET AIR ARM : The Grumman "Martlet" is the latest single-seat fighter to go into service with the Royal Navy. It is fast and highly manœuvrable, with an under-carriage which retracts in a novel fashion into the fat and chubby fuselage : pilots are reported to like this new aircraft very much. The first time one of these machines went into action against the enemy it brought down a Junkers 88. The "Martlet" first flew in 1937 : it has a maximum speed of 325 m.p.h., and a range of 1,150 miles at 285 m.p.h. Its climb is terrific, as it can reach 3,300 feet in one minute. The engine is a Wright-Cyclone radial of 1,200 h.p.

AIR COMMENTARY—By C. G. GREY (Founder of "The Aeroplane")

HOW MANY AEROPLANES HAVE THE GERMANS?

More About the Enemy's Actual Strength in the Air ; The Subject of Seadromes Again ; A German General on the Royal Air Force

WHICH, I wonder, is the more important problem of the moment—getting ready to meet the promised *Blitz* on England, or defeating the submarines' and sea-raiders' attacks on our shipping? Probably the *Blitz* is most on people's minds, because one is apt to be more concerned about what may happen at the moment to the outside of one's skin than one is about future supplies of what one wants inside it. But in the long run, internal want may be as unpleasant as external injury, and death by bomb might be preferable to death by starvation.

Wasteful Aerodromes.—Though we shall not starve, we come very near deserving to do so. Weeks ago, I explained in these notes that the Air Ministry is robbing the cattle of this country every year of a ton of first-class feed-stuffs for each acre of aerodrome used by the Air Force—and for each acre of the unused grassland which surrounds those aerodromes. There must be several hundreds of thousands of acres of land under the control of the Air Ministry, and that means the same number of hundreds of thousands of tons of feed thrown away.

Since my last notes on this subject of grass-drying, I have had the opinion of one of the greatest specialists on grass-growing and agricultural seeds in this country, which means in the world. He agrees that if the Air Ministry let the grass-driers take away all the cut grass after every cutting, which means once every two or three weeks in the late spring and summer, the roots of the grass would be badly starved after two or three years. But he says that if each third or fourth cutting is left to lie, no harm is likely. And—he remarks—we should look upon all our grasslands as a vast reservoir of food which in time of war we might be justified in exhausting.

Now, is the Ministry of Food going to let the Air Ministry throw away those hundreds of thousands of tons of cattle-feed this year as it did last year, or is it not? The question will have to be decided in the next few weeks, because time will be needed to get the grass-drying plants working again, after having been shut down by the Air Ministry's Lands Branch—commonly known as Bricks and Buildings, presumably because it drops so many bricks. And new drying-plants ought to be built at dozens or perhaps hundreds of aerodromes all over Great Britain from Land's End to John o' Groats, and from the Isle of Sheppey to the Isle of Anglesey. That much of their extent is shown on pre-this-war maps, and they have been multiplied in density many-fold.

Seadromes Again.—A piece in these pages recently told of the revival of the idea of "seadromes"—floating islands which, out on the ocean, would look like escaped seaside piers, long enough to give fighters and medium bombers enough runway to take off in a calm. This produced a letter telling me how a fighter pilot, since killed in action, had thought of a similar scheme, and discussed it with the writer of the letter. But the pilot's notion was a series of rafts, to be towed out to sea and assembled where needed, say off the coast of Norway, or Denmark, or Jutland, as refuelling bases for our fighters when our Army starts seriously to push the Germans about on their own ground.

The poor lad had the right idea, but he had evidently not heard of the seadrome scheme of seven or eight years ago. One is apt to forget that the great majority of the flying personnel of the Fighter and Bomber and Coastal Commands were little boys at school only six or eight years ago, and were in the nursery seventeen years ago when Sir Hugh Trenchard and Sir Samuel Hoare started to rebuild the R.A.F. after its decimation (in the true sense of reduction to, not by, one-tenth of its size) in 1919.

If they work they would be worth thousands of lives in our invasion of Germany. And they would be worth many millions of pounds' saving in shipping as bases for patrols of the Atlantic steamship lanes. Is the scheme, in its various forms, worth trying out at a cost of, say, £10,000 or £100,000? It could be proven or disproven half-way through this year if tackled with drive and force. And, if proved, a full-size seadrome could be built by next Christmas.

Fortunately, seadromes can be of little use to the enemy. If they could be, the Germans would have had them working by now—just as they have direct-injection of petrol on *all* their aero-motors now, although they started the war with carburettors, just as we did. They have even altered all their old-type motors to the injection principle. Thank goodness the Germans are short of some of the good qualities which our people have. So, as a seafaring people, let us prove whether seadromes work or not.

So much for supplying our stomachs—indirectly—now let us consider the protection of our heads.

How Many Aeroplanes Have the Germans?—An American General named Marshall, according to the papers, has told the world that the Germans have 35,300 aeroplanes. From which the alarmists deduce that all 35,000 are coming over us as soon as the Big *Blitz* starts. I don't believe it.

When I was in Berlin in October 1938, just after Munich, and all good Germans were delighted because the prospect of war with England was off, and they could concentrate on conquering Russia's threatened aggression, I flew from Berlin to the newest Heinkel assembly-plant at Oranienburg, piloted by General Udet, the new technical chief of the *Luftwaffe*, with, as my fellow-passenger, a world-famous French pilot. We were shown everything in the factory and could make a fairly good guess at what the output could be, judged by the delivery-lines in the flying-shed on the aerodrome where every aeroplane had its final adjustment before being test-flown and taken away.

On the way back by car, the French pilot and I reckoned roughly what the whole output of the German aircraft industry might be—as we knew most of their factories rather well. And we arrived at a figure of 2,000 machines a month. That must have increased during 1939, for we knew that shadow-factories and dispersal factories were being built. So naturally it must have gone up still more in 1940, during the *Sitzkrieg*, when we risked, and lost, men and machines in dropping bomphlets. But we never hurt a German aeroplane except the few Heinkels and Dorniers which were shot down around Scapa and the Firth of Forth until the row started in Norway.

That gave them from October 1938 until May 1940, say eighteen months, to increase and multiply their aircraft — barring indigenous crashes, of which, I believe, they have a much higher proportion than we have ever had. And allowing for their losses during the heavy fighting over the Channel, they may still have 35,000 aeroplanes "on charge" of

HUNDREDS AND HUNDREDS OF WIRELESS OPERATORS IN TRAINING FOR THE R.A.F. : Great numbers of these young men are trained annually at the Technical Training Schools—for both ground duties and for flying personnel. Here is a huge class consisting of hundreds of young men all busy receiving messages in morse : there are three other classes of the same size in this one building

the *Luftwaffe* of all sorts. So let us consider what that means.

If they have 35,000, more than half of those must be trainers of the lighter sort—the Klemm, so easy to fly; the Bücker Jungmann and Jungmeister, tricky, but *such* machines for aerobatics of the higher school, and sundry others, including the tiny, twin-motor Gotha, a kind of kindergarten trainer for conversion of pilots from one motor to two; such an absurd descendant of the horrific Gotha bombers of the last war.

That leaves them with, say, 17,000 machines, which one might call fit for active service, but many by no means up to that disputable standard known as "First-Line Aeroplanes." Most of my friends in the R.A.F. regard as a First-Line machine anything that one would send into the sky, bomber or fighter, to meet the enemy's newest and best with a reasonable prospect of survival.

Of those 17,000, quite a high proportion must be seaplanes, flying-boats, Army co-operation machines (Henschels, Storchs, and the like), and many more must be obsolete or obsolescent types which were in the First-Line class, say, five or six years ago,

THE WIT OF THE WELLINGTONIAN: Night after night long-range bombers carry out raids over Germany. In one of the squadrons, a Wellington pilot has had this amusing black and white drawing painted on to the side of his aircraft

and are now only fit for advanced training, as our Hawker Harts and Hinds and Furies are to-day, or for the holding-down of the natives in occupied countries. So let us be generous and say that there are 12,000 left after these have been eliminated.

Of those, again, there must be more fighters than bombers, so call the proportion 7,000 fighters and 5,000 bombers. Which sounds bad enough, but— Here comes the comforting thought. I have asked flying people of various nations—French, Italian, American, and our own—what they considered would be a fair proportion of their machines to have ready to put into the air at any moment. I do not mean a crack squadron, right on its toes, ready for 100 per cent. action at a moment's notice, but taking good and bad together—plus machines out of action because of accidents or periodic overhauls and inspections, or silly things such as undiscoverable troubles with what Old Man Cody used to call "electrickery," or hydraulic gear, or such-like.

Generally I put the question this way: "Suppose you had in your Command, or Fleet, or Division a thousand (1,000) First-Line aeroplanes, how many do you think that you could send into action at a moment's notice?" And the astonishing thing was the number who said: "Five hundred, with luck"; or "About half, if things were going well." Few were more optimistic than that.

I knew a squadron of the R.A.F. many years ago which had rather an odd type of aeroplane—fifteen of them, I think. And never could they put more than six of them into the air at once. Then a new Commanding Officer was appointed, who believed in cutting routine and getting things done.

He went behind the Air Ministry and the Contracts Department and the Technical Departments direct to the makers, who, because of their loss of face and reputation, gave him everything he wanted, so that Contracts and Accounts never came into the transactions.

When I met that squadron on exercises something near to a year after the change, they were swanking about the fact that for the past six months they had been able at any moment of any day to put a whole squadron of twelve aeroplanes into the air. And that, mark you, still left them with 25 per cent. or 30 per cent. on the ground for overhauls, inspections and repairs.

So, yet again to be generous, and making full allowance for German efficiency, which we always hold up as a standard to be attained, we have to reduce the German effective First-Line attacking fleet to about 3,500 fighters and perhaps 2,500 bombers—*fit to take the air at any one moment.*

But that makes no allowance for casualties. Before the *Blitz* starts, the R.A.F. will know about it—unless our Air Intelligence is much less efficient than I think it is—and our long-range fighters and bombers will be over the other side shooting the lights out of machines on the ground, and bombing hangars and repair-shops and dispersal points. So, no matter how many German machines may be theoretically ready to take the air, quite a high percentage of them will have to stay put.

There is another side to the party which is worth considering. If and when the invasion starts, the Germans are sure to use parachute troops in quantities, jettisoned from the good old Ju.-52 troop-carriers, and a lot of Ju.-52s full of troops will be planted all anyhow on open spaces, and possibly they may even use the much-advertised trains of gliders—a more criminal waste of life than normal air war itself.

Against such slow-flying invaders we can use all our obsolete First-Line machines, and advanced trainers.

And against flat boats and landing-pontoons, and against any small parties which might make landing and dig themselves in, anything that will carry a bomb, or a gas-liquid sprayer, or a flame-oil-thrower, is fit to use. So we can use up vast numbers of old types, still good aeroplanes, which are merely out of the Service because they are out of date. On the other hand, the Germans can only use their most modern types, because Great Britain is still an island, and the head of a great Empire, and is heavily protected by the world's best aeroplanes and air-crews.

The Way of a Ministry.—Verily, the way of a Ministry passeth all understanding. If I had written and the Editor had published the statement that the R.A.F. are using Boulton-Paul Defiant monoplanes as night-fighters, we might have been shot at any of these murky raidless dawns of late, or, more cruel fate, we might have been sent to one of the dungeons beneath the Ministry of Information, and condemned to listen on the radio there to the bulletins of the Air Ministry and Ministry of Home Security till we died of boredom.

And now the B.B.C. broadcasts (on February 1, to be exact) the exciting news that a party of workers from the factory where Defiants are made—of course, the names of firms must not be mentioned by the B.B.C., because that might lead to graft, nepotism, barratry, arson, and all sorts of crimes—were taken for a joy-ride to an R.A.F. night-fighter station, where the pilots told them that Defiants are "wizard to fly"—I thought that "wizard" as an adjective had faded out of service in the R.A.F. two years ago.

But would not one think that the one thing which the Air Ministry would want to keep dark is what type of aeroplane (or airplane) we are using, or have been using, or are going to use, to lick the night-raiders? Surely the essence of night-fighting is that the other fellow should never know what hit him, and that if he is missed he should never know that he was missed. Still, good as the Defiant and its four-gun turret proved themselves to be in front of Dunkirk, they are not the whole secret of our night-fighter operations.

An Unsolicited Testimonial.—General (or is he Marshal?) Erhardt Milch's speech to the *Luftwaffe* a week or two ago, as reported by the papers and the B.B.C., was what one would have expected from him, a sporting acknowledgment of the spirit and strength of the R.A.F. In that great book, *Greenmantle*, John Buchan, later Lord Tweedsmuir, and Governor-General of Canada, described a character as the sort of German with whom his hero would have liked to work in time of peace. Erhardt Milch is one of those.

He had a fine record as a pilot in 1914-18. He, with Major Wronski and Dr. Merkel, were the builders of the great Luft Hansa air line, whose operations stretched from Pekin and Moscow to Berlin, and from Berlin across the South Atlantic, by way of our port of Bathurst on the Gambia in West Africa, to Brazil, and up to Colombia and down and across to Buenos Aires and Santiago de Chile. Our Imperial Airways worked "in pool" with Luft Hansa to Berlin in a most friendly way.

Milch was also one of the under-cover organisers of that volunteer organisation which later became known as the "Secret Air Force," from which the *Luftwaffe* blossomed in due course. He has always admired and respected the R.A.F., and the work of the British aircraft industry. His last visit to this country was in 1938, when he and General Stumpf, his Chief of Staff, and General Udet, his chief Technical Officer, were the guests of the Air Ministry, and were taken on a tour of several of our shadow-factories, which were then just getting going. Presumably the idea was to show them that a row with us would be bad business, and I know that they were much impressed. At that time all good Germans expected a war with Russia, and rather hoped for our R.A.F. as Allies. But Fate was stronger than their inclinations.

"A MINEFIELD HAS BEEN LAID"—AND SOME OF THE MEN WHO LAY IT

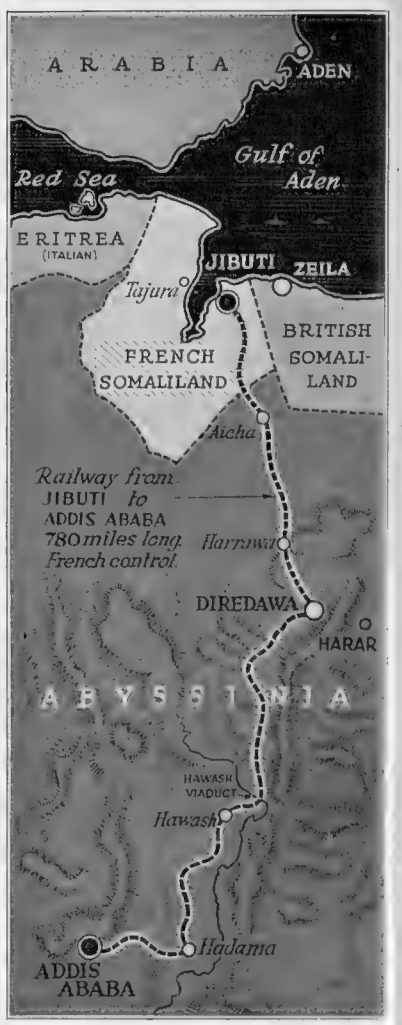
When the Germans surprised the world by rushing into Norway by ship and aeroplane in April last, the British Navy sprang a counter-surprise a few days afterwards. They mined the Baltic, Skagerrak, the Cattegat, and the Danish harbours from which the German troop transports and supply ships were bound to start, and all the waters through which they had to pass. One morning, without preliminary warning, all the newspapers came out with maps showing our freshly-sown minefields, as warnings to neutral shipping. That was the work of the Fleet Air Arm. It was, in fact, the Fleet Air Arm's first big job of work since it was taken away from the R.A.F. and made into a branch of the Royal Navy early in 1939. As the war area has extended all the way from North Norway to the Spanish and French frontier on the Bay of Biscay, and now into the Mediterranean, there has been more and more mine-laying to do. Every fiord, bay, creek, or harbour is a possible base for German or Italian submarines or invasion flotillas. So every inlet and outlet has to be mined as well as bombed. This picture was taken in the Crew Room at a Fleet Air Arm station: the pilots and observers are studying maps for their next undertaking whilst waiting for the take-off

THE WHITE FAÇADE OF DJIBOUTI (JIBUTI IN THE ANGLICISED SPELLING), THE PORT OF FRENCH SOMALILAND

Seen from the sea, Djibouti presents a long line of white governmental buildings, with the Governor's house showing up on the skyline. The view is characteristic of many Near Eastern ports. Memories of Venice, the Adriatic ports and Alexandria float in the mind as the ship nears the land. The high ground beyond, which the railway has to climb, is not visible ; only the line of buildings shimmering in the heat. Djibouti is not as hot as Massawa ; its more open position on the Gulf of Aden probably accounts for this. Last week the situation in Italian Ethiopia was so serious that it looked as if Djibouti and French Somaliland generally might suffer a big invasion of refugees, both civil and military. The colony has been under Vichy government since the collapse of France, so that a very curious international situation would arise if and when these refugees presented themselves at the frontier

WHERE EAST AND WEST MINGLE ON THE QUAYSIDE APPROACHES AT DJIBOUTI

The tricolour still waves over Djibouti, in spite of the colony's uncertain position under the Vichy Government. The inhabitants have been living in close proximity to one of the enemy partners ; during the last few weeks and days the reactions of French officialdom at Djibouti must have been very confused. Italy, which threatened France in her time of confusion during the advance of Germany, was retreating and surrendering before the advance of British forces from more than one direction



THE ROUTE OF THE FRENCH RAILWAY FROM ADDIS ABABA TO DJIBOUTI, WHICH, IT WAS EXPECTED, WOULD SOON BE FUNCTIONING AGAIN :

From the Abyssinian terminus, the railway route drops from the plateau to the Hawash valley, which is crossed on a long viaduct. Then the line skirts the high ground of the Harar ridge. There are a large number of cuttings and tunnellings on this hilly section of the route. From Harrawa, the inclination is more or less downhill to Aicha, after which the frontier is crossed at Gobad. The greatest change of scenery is at Hawash where the Danakil desert air is encountered. The railway demonstrated its usefulness as a means of communication with the outer world from its very start

DJIBOUTI, FRENCH IN ITS GOVERNMENT AND BUILDINGS, PRESENTS MANY TOUCHES OF EAST AFRICAN LIFE

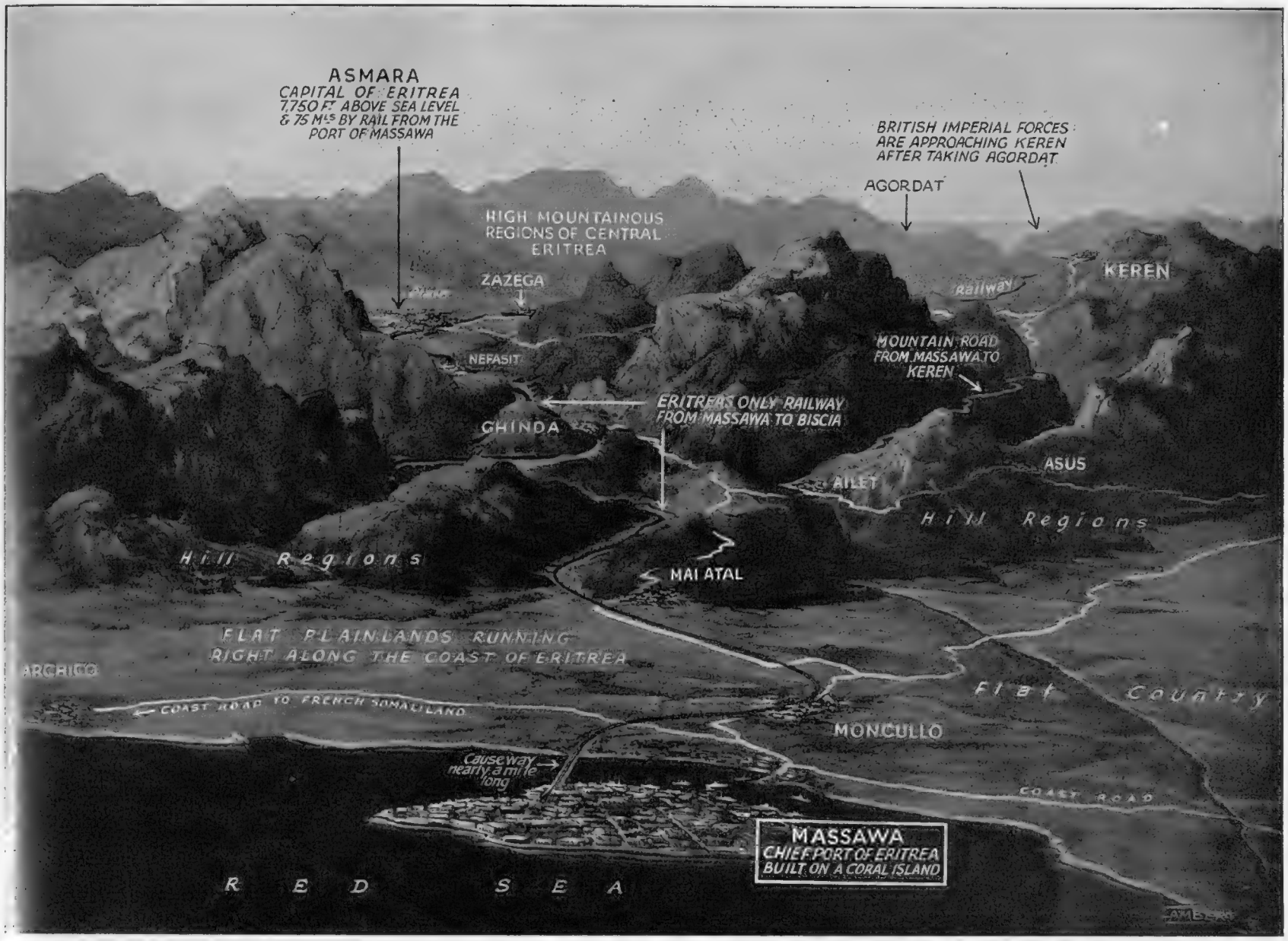
When the French determined to develop French Somaliland, the old capital of Obok was deserted for the new site on the Gulf of Tajura. For a long time the Somali coast was occupied by Arab trading settlements, which remained unaltered by Western influences until the arrival of the French, Italian and British. There are still evidences of the Arab's strong trading instincts. The native Somalis are often tall, like the pair seen above. They are relatives of the "fuzzy-wuzzies" of the interior

A BIRD'S-EYE VIEW OF THE HARBOUR OF MASSAWA,

The fate of Massawa and of Eritrea in general is now hanging in the balance as these pages are going to press. The port is one of the hottest places on the Red Sea coast. The place literally burns with heat in the daytime, and the sense of suffocation at night

The CRACKING of the ITALIAN "EMPIRE"

The Two Railway Lines Leading from Italy's East African Capitals, Both of Which are now in the Gravest Jeopardy Owing to the Several British Advances



HOW THE ROAD AND RAILWAY ASCEND FROM THE BURNING HEAT OF MASSAWA TO COOL ASMARA

The journey from the port to Asmara is well described by Herbert Matthews in his *Eye-Witness in Abyssinia*: "We left early the next morning for Asmara on a 'Littorino'—one of those streamlined, electrically-run cars, which made the trip in three and one-half hours, instead of eight. It was my introduction to some of the most stupendous scenery in the world, although the chief impression I had at the time was of the barrenness of the country. The desolation was contagious, and we were all dismayed at the sight. However, as an engineering feat it was astonishing. In about seventy-five miles the train mounts 7,500 ft. to Asmara. The beginning is through a completely arid plain, with no life except that furnished by workmen and soldiers making a new road, building bridges or driving mules. Every quarter of an hour there was a so-called station, where a few poor devils kept watch over nothing in particular. The car went through innumerable little tunnels, and around hundreds of curves with sheer drops of as much as 400 or 500 ft. if the 'Littorino' should have decided to go off the track. Near Asmara the vistas became positively fantastic"

CHIEF PORT OF ERITREA, NOW HARD PRESSED BY THE WAR

is very trying to the traveller who may have to spend a torrid night among the new Italian streets. There is a queer kind of mechanical activity about the place, as if produced from some unseen motive force. Great scarcity of food and other supplies was reported last week

TYPICAL OF THE REFUGEES WHO ARE EVEN NOW FINDING THEIR WAY TO THE PORTS

These Italian road-builders were on their way to the interior from Massawa. They were part of a battalion of specialised Italian workers who arrived in Eritrea as part of the forced development of the Italian colony. The immigration to Eritrea has been limited—the number of independent settler-farmers is very small. In Asmara, the society one met was almost entirely official. Sport was limited, owing to the height above sea-level

The World of Books—By Vernon Fane

STORIES GRAVE AND GAY

Hell and the Soviets; Round England with a Circus; Delilah Bouleversée; Mr. Cary's Undreamlike Children

THE life of a political prisoner in a totalitarian State has often been described by those who have been fortunate enough to stay alive to tell the tale. Whether it is Dachau, the Solovetsky, or the Lipari Islands, the story invariably produces the same details of sudden arrest, a farcical trial, the attempted extraction of "confessions" by torture and various other refinements of the third degree, bad food, brutal guards, and the mental, moral and physical degeneration and degradation of the prisoners, most of which is accentuated by the fact that a large number of them are from the professional or intellectual classes. In Russia their fate is made even more intolerable by mixing them indiscriminately with the criminal classes.

Mussolini once referred to his opposite number in Moscow as a tragic clown. On both counts, that of clowning and of human tragedy, he is a bit of an expert himself. The perpetual sneer of both Communist and Fascist gangsters, who command the support of millions, both inside and outside of their countries, is against what they describe as the hypocritical humanitarianism of the democracies, which they flatly state is a form of decadence. Freedom is a much-abused word, and all forms of injustice are committed in its name. But the right of free political association is the basis of what is understood as democratic government, and that is one of the root causes of the world struggle to-day. The same right, however, cannot be extended to any organisation or group of individuals who, on grounds which they themselves declare to be ideological, by subversion and sabotage, seek to destroy from within a nation at war. The totalitarian propagandists have always displayed a great weakness in that they persistently underrate their opponents. Political tolerance of the kind that has always been extended to them in this country they have exploited to the full, but fifth column work, either from the Right or the Left, has to be dealt with in a war on the same terms as any other enemy activity. Our own Communists appear to be pained and surprised that the whole country should approve the suppression of the *Daily Worker*. In none but a free country would the Government feel called upon to account for such an action to the people. The debate in the House of Commons revealed a strength which they had under-estimated.

It would be funny, if it were not an almost intolerable impertinence, to find these people discoursing upon the rights of free expression, a free Press, and all that sort of thing. Does such a right exist in their Workers' Paradise, their Soviet Heaven?

RED HELL, by Joseph Ameel (Robert Hale. 12s. 6d.), provides a direct and incontrovertible answer. The author, a Belgian subject, spent twenty years in Russia. He lived through the revolution, and for thirteen years was comparatively happy under Soviet rule, employed as a conservator of forests and a game warden in North Russia.

Then the usual thing happened. He was arrested without charge and spent six months in the G.P.U. prison in Leningrad. Two years after his release he was arrested again and sentenced to five years' penal servitude, which he spent in the notorious Solovetsky islands, and had his sentence doubled in the purge which followed the assassination of Kirov. Eventually he was released through the active intervention of the Belgian Government.

The book is as revealing as most of its kind. G.P.U. methods do not differ greatly from those of the Gestapo, except that the G.P.U. seem to put a finer point of refinement upon their cruelties. Conditions in the prisons and in the camps are about as appalling as anything that has yet been described. The difference between the Russians and the Germans seems to be that the Russians enslave their political prisoners to a greater extent and mix them indiscriminately with the criminal classes. The mortality, and the brutality with which they are treated seems to be about the same.

Having said that, it is only fair to point out that the author had, apparently of his own free will, acquiesced in Soviet rule to the extent of remaining in the country and working there for years after the revolution. Moreover, during his period of incarceration in the Kresty prison, in Leningrad, he quickly became a "trusty," and was employed on clerical duties which gave him privileges not enjoyed by the other inmates. Then, in the Solovetsky Islands, he became an armed guard. "My situation was a peculiar one: on the one hand I was a convict and on the other I was an adviser of the combatant branch of the armed guard (the *V. Okhr*)." If we accept the author's declaration that he was perfectly innocent of all the charges brought against him, we must also admire his ingenuity in avoiding, while in prison, the more disagreeable aspects of the life he so vividly describes.

Dean Inge states, on the wrapper of this book, that "the good faith and honesty of the writer cannot be doubted." Be that as it may, he leaves the reader in no doubt as to his opinion of his former masters. On the death of Gorky he remarks: "The *Frankfurter Zeitung* once rather aptly referred to the Red Mahomet as the 'Red Rasputin,' but I myself think that this is an insult to the memory of a rascal who, whatever his misdeeds may have been, never lacked individuality and independence."

Or of their achievements. As, for instance, writing of the construction of the Volga-Moscow canal: "The fact that Russia managed to get along perfectly well for a thousand years without feeling the need for any of these fantastic waterways never worried the ignorant youths who conceived the idea of these grotesque schemes. All they were, and still are, concerned with is the gratification of the Bolshevik mania for emulating, overtaking and impressing."

It is pleasant to be able to turn from a consideration of such things to a book about a circus. What happens to circuses in wartime? With the rationing of foodstuffs, how fare our friends the elephants, the lions and tigers, those lovely piebald and skewbald ponies, those proud horses, those master conjurers, the performing seals and all the rest of the assortment?

Mr. Rupert Croft-Cooke partly answers the question in **THE CIRCUS HAS NO HOME** (Methuen. 12s. 6d.), but not entirely.

This is the story of a "little" circus, of the kind which tours the villages and market towns, bringing a life of their own, colour and excitement wherever they go. This one is a happy family in every sense of the word. The "Count" and "Countess" Rosaire have run it as a going concern ever since a stilt-walking clown fell in love with and married the daughter of an innkeeper in a Staffordshire village. With their eight children, whom they have brought up and trained for the ring, they have become as famous among the hop-fields of Kent as they are in the orchards of Worcestershire.

Mr. Croft-Cooke joined them at Tenterden, which lies between marsh and weald in the most English of all the counties. They invited him to go "tenting" with them. The result is a charming, and indeed absorbing, account of their nomadic existence, their different personalities, their customs and problems, as well as a fascinating cross-section of rural life in a dozen counties.

From his previous novels I remember Mr. Bruce Marshall to be a novelist who has devoted his talents to light themes with an addiction to the humorous aspects of theological controversies. He can be wise, witty and satirical, and has enjoyed the kind of success usually accorded to such writers in this country.

DELILAH UPSIDE DOWN (Heinemann. 7s. 6d.) does not depart very far from the formula. For our enjoyment Mr. Marshall creates a group of officers of a British line regiment. Being Mr. Marshall, he draws a fairly careful picture of the battalion chaplain, and also introduces Lieut. O'Casey, "with the misery of Calvary in his Irish eyes," and a man terribly obsessed by the laws of the "Catholic, Apostolic and Roman Church."

They arrive in a French village and find themselves billeted in the house of a bishop, with an abbé in attendance, as well as a seemingly sinister German fraulein. The Delilah of the story is a *jeune fille*, a relative of the bishop's, attractive to the point of fascination, and having a modern outlook which never fails to startle her immediate surroundings. Delilah plays havoc, of course, but in the end she is *bouleversée* (hence the title, which isn't too good a joke in translation).

It is all very lighthearted, witty and shrewd, and the author shows the usual evidence of enjoying his tilts against established religious conventions. It is also nothing much more.

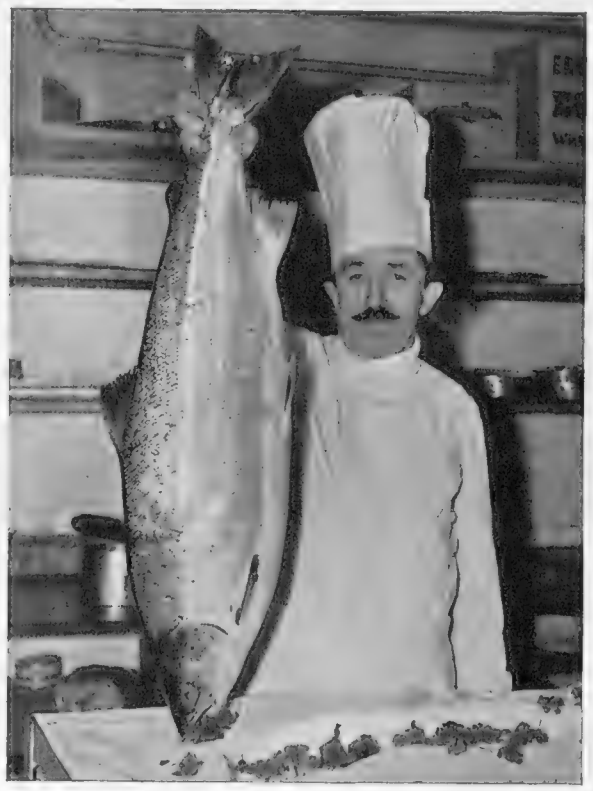
In **A HOUSE OF CHILDREN** (Michael Joseph. 8s.) Mr. Joyce Cary once more proves that it is possible to enter into the minds of children and to engage the problems and perplexities with which they are confronted in life with sympathy, understanding and truth.

Briefly it is the story of six children who spend their holidays together on an Irish loch. They are cousins, in charge of an easy-going but insensitive old aunt. One summer a tutor came to look after them: a strange, eccentric man with unconventional ideas, who won their devotion because he was different from all the grown-ups they had ever known, and because he taught them many things, filled their young lives with fresh interest, and brought them a sense of happiness.

Mr. Cary can reveal the mind of a child in all its objectiveness; in the light and shade of its callousness and strange loyalties; in its inflexibility and receptiveness. Nostalgic memories and sentimentality, which so often destroy even quite serious studies of children, never obtrude upon Mr. Cary's scene. In some of his finer psychological flights he may appear to be at times over-ingenious, but he never strays one hairbreadth from what the reader will agree is truth.

It is a rare and refreshing story, and one which gave me, personally, a great deal of pleasure.

THE SOWER GOES FORTH TO SOW . . . In Wiltshire, fertile country of hills and dales and rolling agricultural acres, times move very slowly. Here at Milton, near Marlborough, the sower—as in early days—goes forth to sow by hand. True, the sower is a girl—that is a sign of the changes brought about by the War; true also, the sowing is done, not by hand, but by a "fiddle drill," an ancient and rare agricultural implement: the "bow" of the fiddle is drawn backwards and forwards, whirling a sprayer which scatters the seed to the best advantage



A FISH FROM THE RIVER TEST: Claimed to be the finest fish taken from the Test, near Nursling, this salmon of very fine proportions weighs 24 lb. It was taken by a fisherman with fifty-three years' experience. Maitre Chef Casado, of the May Fair Hotel—himself a famous angler from the Basque country—says it is the finest specimen he has seen, dead or alive, for many years

It is the performance and reliability of Rolls-Royce engines which play so important a part in the achievements of British fighters and bombers. The Nation, and indeed the cause of civilisation, is fortunate in having such an organisation at its service.

Investors' Guardian

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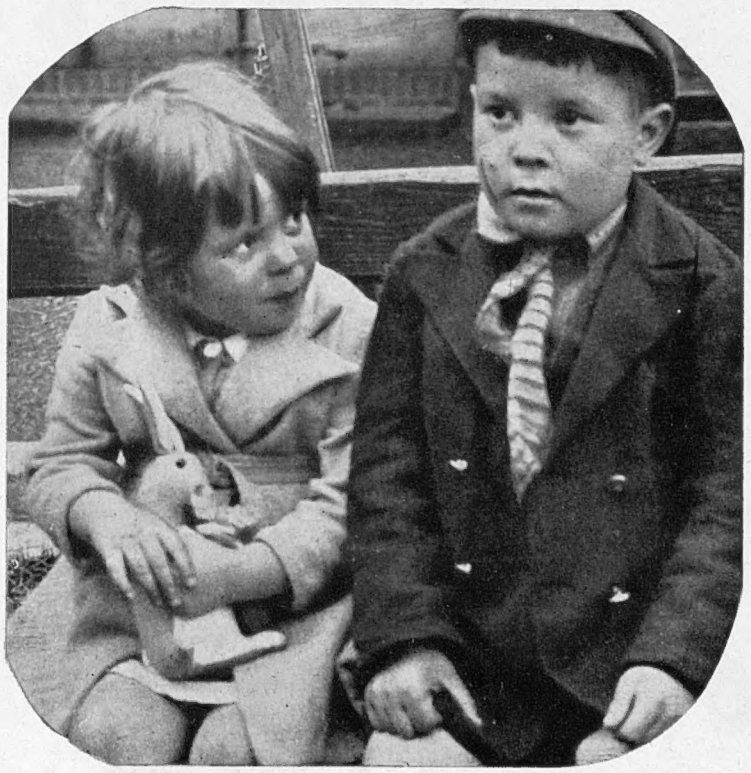
FOR SPEED AND RELIABILITY

The WAR and HOMELESS CHILDREN



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CHILDREN NEEDING CARE AND PROTECTION BECAUSE OF THE WAR ARE DAILY COMING TO US FOR A HOME

OVER 5000 CHILDREN TO FEED AND CLOTHE EVERY DAY

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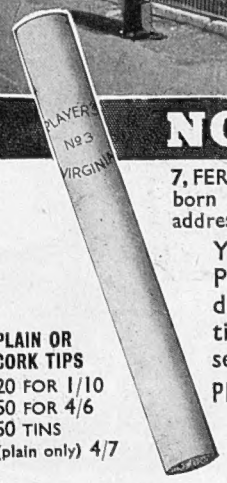
7, FERRY ROAD, TOPSHAM. The House of Sir William Follett, born 1798, famous Attorney-General who, being paralysed, addressed the House of Commons from a high chair.

Yet another famous number with smokers is Player's No. 3—that well-known cigarette of delightful mellowness and excellent flavour, distinguished for the *finer* quality of its selected leaf.

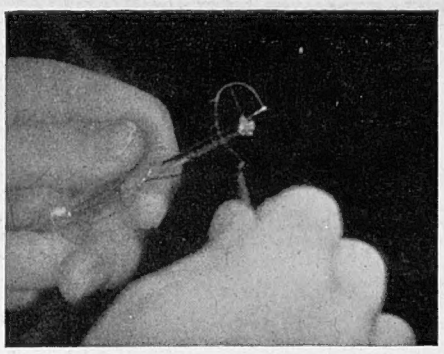


PLAIN OR CORK TIPS
20 FOR 1/10
50 FOR 4/6
50 TINS (plain only) 4/7

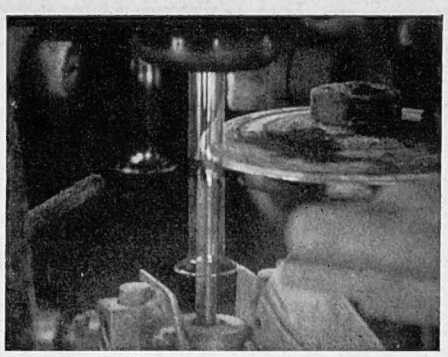
PLAYER'S **NUMBER 3**
EXTRA QUALITY CIGARETTES

3.P.75C

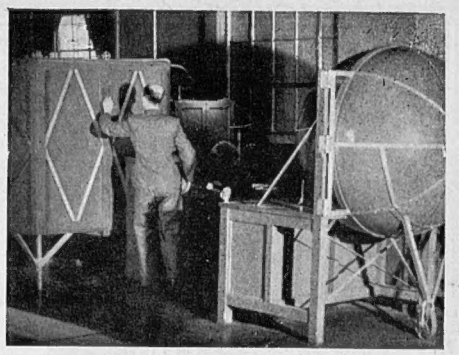
BRAVERY REWARDED: Nineteen-year-old Gunner Stanley Martin, who has been awarded the Military Medal for his action in staying at his battery post when it was attacked by an enemy plane and finally bringing it down with a burst of fire from a light machine-gun. Diving low out of the clouds, a Dornier 17 made a determined attack on an anti-aircraft battery in East Anglia. Gunner Martin withheld his fire until the machine was only seventy-five yards away and then poured a full drum of bullets into it, causing it to crash into the River Stour. Before enlisting, Stanley Martin was on the Staff of Illustrated Newspapers (of which this Journal is a member), who heartily congratulate him on his daring feat



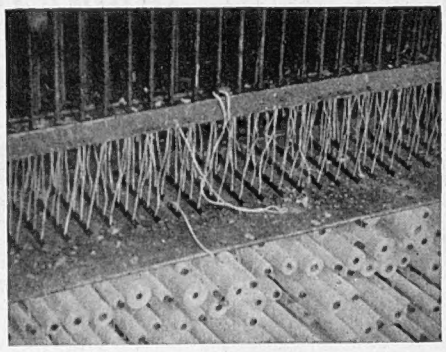
FIXING THE WICK : Electric lamps also have to have their wicks fixed. Women operatives fix the filaments, which appear like finest threads, yet really they are twice-coiled coils of wire



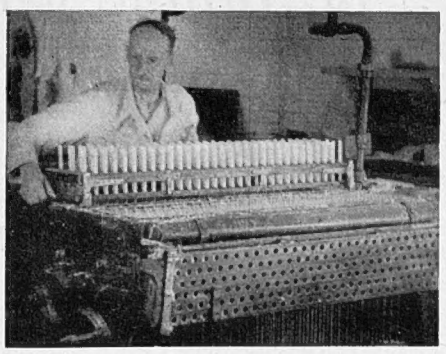
A DELICATE OPERATION : A machine for cutting the head of the glass stem of an electric lamp after the symmetrical flare has been formed at the base. The glass is first heated



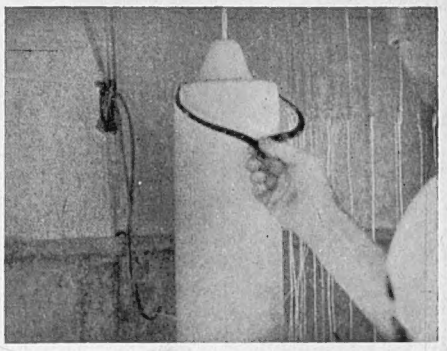
THE FINAL TEST : The complicated array of testing apparatus in which every lamp is tried for conformity to established standards. A photo-electric cell records the results of each individual test



CANDLE-WICKS : On the racks below are bobbins of candlewick thread, while on the platform above, 'candle-moulds stand ready to clothe them in warm wax. Modern candle-making is done entirely by machinery



MASS PRODUCTION : A full load of candles emerging from the machine which has coated the wicks with wax. The final moulding is seen above as the candles assume their familiar shape and size



MEASURING UNIFORMITY : Testing a giant candle to see whether it is even and round. This is a rough gauge test which precedes the rolling stage, after which they are given a final polish and then trimmed top and bottom

CANDLES AND CANDLE-POWER

These illustrations are scenes from one of the new Ediswan short publicity films which compares the making of candles with the manufacture of the modern electric lamp, under the appropriate title, *Candle Power*. Messrs. Ediswan have embarked upon a series of these short publicity films, included in the popular *Signs of the Times* film magazines. Two other titles are *Let's See* and *When Shadows Fall*, each dealing with interesting features of lamp-making and various aspects of the vast and ever more important branch of modern research lighting. *The Signs of the Times* magazine reel, produced by Wallace Productions, Ltd., consists of a number of short subjects of topical and general appeal. These magazines, distributed widely throughout the country, appear at leading cinemas at fortnightly intervals.

Smokers' 'Fur'

How to detect it—How to prevent it

Try this now. Run your tongue round your mouth—do you notice it . . . a rough woolly feeling? Smokers' fur has got a hold, and is staining your teeth. But don't worry, you can stop this fur from ruining the look of your teeth.

Dentists know smokers' fur is caused by excess acid in the mouth. Kill the acid and you shift the fur. What is the scientific way to destroy mouth acid? 12,000 dentists say 'Milk of Magnesia' brand antacid is the most effective antacid known. They recommend smokers to use the tooth-paste containing 'Milk of Magnesia'—the only tooth-paste containing it—Phillips' Dental Magnesia.

Commence fighting mouth acid to-night. Get a tube of Phillips' Dental Magnesia and clean your teeth with it each night and morning. Then you'll feel the difference; no more morning mouth; no more stale breath. Instead you'll have teeth which look clean, feel clean, are clean; a sweet mouth to give new zest to smoking. A mouth that will say Good morning! and mean it.

Sold everywhere.

Phillips' Dental Magnesia

★ *'Milk of Magnesia' is the trade mark of Phillips' preparation of Magnesia.*

THE town or country suit which your tailor cuts in Sportex has before it a long life and a distinguished old age. This exclusive Scottish cloth is woven with a special regard for hard wear—impervious alike to country thorns and city snags. It is a peace-time luxury for a war-time budget.

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PRINTED IN ENGLAND by THE ILLUSTRATED LONDON NEWS AND SKETCH, LTD., Milford Lane, London, W.C.2, and Published Weekly by ILLUSTRATED NEWSPAPERS, LTD., 32-34, St. Bride Street, London, E.C.4. SATURDAY, FEBRUARY 15, 1941. Entered as Second-Class Matter at the New York (N.Y.) Post Office, 1903.

In Quest of Good Hotels

By ASHLEY COURTENAY

I WRITE in the Oval Bedroom of Harleyford Manor. Every inch of this now superior guest house portrays an Englishman's home. Dignified comfort; unostentatious luxury; proud memories of busy lives in the country's service.

On the wall is a steel-engraving entitled: "Mansion and Gateway in Old Jewry," and I read that: "Sir Robert Clayton, Knight and Lord Mayor in 1679 and who was likewise distinguished by his benefactions to Christ's and St. Thomas's Hospital, resided in this house during his Mayoralty. Sir Robert entertained in it at a splendid banquet, King Charles the 2nd and his brother, the Duke of York. The Trained Bands formed a line extending from Cheapside to the above Gateway, where, attended by the Aldermen and Sheriffs, his Lordship received the Royal visitors."

It is irreconcilable that on this night, spotters and wardens may be protecting this very gateway from that senseless terror that flies by night. Yet here, at this peaceful spot, not a sound can be heard, though the Mansion House is but thirty miles away.

Harleyford Manor, which is to be found some two miles from Marlow, on the banks of Old Father Thames, has always been the seat of the Claytons, though, from the brochure of the now guest house, it would seem that our 1679 Lord Mayor had not this cloistered retreat to repair to, as Harleyford Manor was not built until 1755. Yet the Clayton family must have been closely connected with the City, as the house was designed by Sir Robert Taylor, architect to the Bank of England, and is a typical specimen of the more severe Palladian architecture of his period.

From the walls of the present dining-room, other distinguished Claytons look down on one. General Sir William Robert Clayton, who fought at Vittoria and Waterloo under Wellington; another who was a member of Parliament; a Lord Mayor; whilst Romneys, Gainsboroughs, and the brushes of other famous artists, depict other members of the Clayton family.

On the great staircase are other family portraits, and whilst some greet one with cold indifference, I detect in others a thankful look that Harleyford, though a guest house, is still in the possession of the Clayton family, and that the Claytons who now run it are careful to see that it is not a bit "hotel-y."

Harleyford will have no appeal to the deep-rooted hotel dweller, but will mean everything to those accustomed and appreciative of English country life under exceptionally comfortable conditions. . . .

With the exception of skilful modernisation, none of the period charm has been lost.

One *feels* the guest of the Clayton family, and even though one pays a moderate sum for living in such comfort, there is no office where one obtrusively asks for one's bill. Instead, one inquires about it rather furtively in case one of the "walled" Claytons might spot what was happening, step out of their frame, and say, "Please remember you are our *guest*, and not a visitor."

All around one is the personal belongings of a home. The family silver and china; books bound with the Clayton crest on their covers. . . . Many of the family four-posters remain, though modern, interior-sprung mattresses have been fitted; and outdoors, 1,000 acres of lawns and parkland are kept in good repair by the Clayton estate; whilst, behind walled gardens, come supplies of vegetables and fruit—welcome, indeed, in these days of limitations.

As a winter home not too far from London, and amazingly peaceful, I cannot imagine a more delightful place to settle down in. For the City man without a car to get to Marlow or Maidenhead Station, it is not too easy, for Harleyford lies a good mile off the Marlow-Henley road, and until one has mastered the mechanical gate which confronts one a few hundred yards from the house, one might lose one's train and one's temper. On the other hand, there are a number of Service people who park their family at Harleyford, and join them at week-ends; though, personally, if I had to work in town, I should prefer to catch the 8.32 train each morning, and come back by the 4.50 from Paddington to be sure of a good night's rest.

More than that, I like the atmosphere of Harleyford, for, apart from its homeliness, there is now a country club with a very club-able bar—a pleasant spot indeed in which to enjoy one's spiritual "night-cap" before ascending the great stairway to one's four-poster.

It is time I switched the light off and went to sleep; but there is a wood-and-coal fire burning in my Oval Bedroom, and I am loath to leave it. Yet how nice it will be to lie in bed and watch the firelight flickering on the ceiling. I cannot remember such luxury since I was a small boy and had measles! True, the fire will be out by morning, but there are several capacious bathrooms just by my room. The water will be piping hot. I shall shave and dress there, for there is plenty of bathroom accommodation. In any case, there is that consoling thought: "One feels at home, and so one *is* at home." What a heavenly place Harleyford must be in springtime! The sweeping curves of the river, the hanging woods which clothe the last escarpment of the Chilterns; a day's golf at Temple, Henley, or Flackwell Heath; fishing in the Manor's own stretch of water; walks through the woods to Hambleden, along the river to Medmenham Abbey and Hurley. . . .

Harleyford, to forget the hurly-burly of life is my last thought. The firelight is now flickering on the ceiling—good-night!

ANSWERS TO CORRESPONDENTS

A. E. I., Dulverton.—When you have to go Lymington way, I think your best plan would be to stay at Harewood House Hotel, Keyhaven. It is surprisingly quiet there, in spite of its position on the Solent. It is more of a home than an hotel. I always look upon it as a guest house of quality.

Mr. Ashley Courtenay is always pleased to advise "Sphere" readers of hotels, both large and small, known to him personally. Letters, accompanied by a 2½d. stamp for reply, should be addressed to him, c/o the Editor, THE SPHERE, *32-34, St. Bride Street, London, E.C.4. Personal and telephone inquiries, however, cannot be accepted.*

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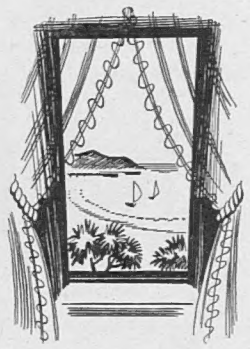

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